IC70 Motherboard

Mini-ITX Fan SBC with Intel® Core™ i5/i7/Celeron® Processor, VGA, LVDS, Giga Ethernet, Mini-PCIe and PCIE x 16 Slot

User Manual / Engineering Spec.

Version 1.2

FCC Statement

This device complies with part 15 FCC rules. Operation is subject to the following two conditions：

- This device may not cause harmful interference.
- This device must accept any interference received including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a class "a" digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at him own expense.

Copyright Notice

ALL RIGHTS RESERVED. No part of this document may be reproduced, copied, translated, or transmitted in any form or by any means, electronic or mechanical, for any purpose, without the prior written permission of the original manufacturer.

Trademark Acknowledgement

Brand and product names are trademarks or registered trademarks of their respective owners.

Disclaimer

We. reserves the right to make changes, without notice, to any product, including circuits and/or software described or contained in this manual in order to improve design and/or performance. We assume no responsibility or liability for the use of the described product(s), conveys no license or title under any patent, copyright, or masks work rights to these products, and makes no representations or warranties that these products are free from patent, copyright, or mask work right infringement, unless otherwise specified. Applications that are described in this manual are for illustration purposes only. We Communication Inc. makes no representation or warranty that such application will be suitable for the specified use without further testing or modification.

Warranty

We warrant that each of its products will be free from material and workmanship defects for a period of one year from the invoice date. If the customer discovers a defect, We will, at its option, repair or replace the defective product at no charge to the customer, provided it is returned during the warranty period of one year, with transportation charges prepaid. The returned product must be properly packaged in its original packaging to obtain warranty service.

If the serial number and the product shipping data differ by over 30 days, the in-warranty service will be made according to the shipping date. In the serial numbers the third and fourth two digits give the year of manufacture, and the fifth digit means the month (e. g., with A for October, B for November and C for December).

For example, the serial number 1W07Axxxxxxxx means October of year 2007.

Packing List

Before using this Motherboard, please make sure that all the items listed below are present in your package：

- IC70 Motherboard
- IC70 SBC User Manual
- HDD SATA Cable
- User's Manual & Driver CD

If any of these items are missing or damaged, contact your distributor or sales representative immediately.

Customer Service

We provide service guide for any problem as follow steps： Please contact with your distributor, sales representative, or our customer service center for technical support if you need additional assistance. You may have the following information ready before you call：

- Product serial number
- Peripheral attachments
- Software (OS, version, application software, etc.)
- Description of complete problem
- The exact wording of any error messages

In addition, free technical support is available from our engineers every business day. We are always ready to give advice on application requirements or specific information on the installation and operation of any of our products. Please do not hesitate to call or e-mail us.

Safety Precautions

- **Warning!**

Always completely disconnect the power cord from your chassis whenever you work with the hardware. Do not make connections while the power is on. Sensitive electronic components can be damaged by sudden power surges. Only experienced electronic personnel should open the PC chassis.

- **Caution!**

Always ground yourself to remove any static charge before touching the CPU card. Modern electronic devices are very sensitive to static electric charges. As a safety precaution, use a grounding wrist strap at all times. Place all electronic components in a static-dissipative surface or static-shielded bag when they are not in the chassis.

Safety and Warranty

1. Please read these safety instructions carefully.
2. Please keep this user's manual for later reference.
3. Please disconnect this equipment from any AC outlet before cleaning. Do not use liquid or spray detergents for cleaning. Use a damp cloth.
4. For pluggable equipment, the power outlet must be installed near the equipment and must be easily accessible.
5. Keep this equipment away from humidity.
6. Put this equipment on a reliable surface during installation. Dropping it or letting it fall could cause damage.
7. The openings on the enclosure are for air convection. Protect the equipment from overheating. DO NOT COVER THE OPENINGS.
8. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
9. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
10. All cautions and warnings on the equipment should be noted.
11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient over-voltage.
12. Never pour any liquid into an opening. This could cause fire or electrical shock.
13. Never open the equipment. For safety reasons, only qualified service personnel should open the equipment.
14. If any of the following situations arises, get the equipment checked by service personnel:
    A. The power cord or plug is damaged.
    B. Liquid has penetrated into the equipment.
    C. The equipment has been exposed to moisture.
    D. The equipment does not work well, or you cannot get it to work according to the user's manual.
    E. The equipment has been dropped and damaged.
    F. The equipment has obvious signs of breakage.
15. Do not leave this equipment in an uncontrolled environment where the storage temperature is below -20° C (-4°F) or above 60° C (140° F). It may damage the equipment.

Revision History

Version	Date	Note	Author
1.0	2011.07.15	✓ Initial Draft	Henry Hsu
1.1	2011.12.09	✓ Add COM port driver install	Henry Hsu
1.2	2015.05.08	✓ Revise Pin definition	Jimmy Chen

Contents

CHAPTER 1 GENERAL INFORMATION.....1

1.1 INTRODUCTION 1
1.2 FEATURE 1
1.3 MOTHERBOARD SPECIFICATIONS 2
1.4 FUNCTION BLOCK 3
1.5 BOARD DIMENSIONS.....4

CHAPTER 2 INSTALLATIONS.....6

2.1 MEMORY MODULE INSTALLATION 6
2.2 I/O EQUIPMENT INSTALLATION 6
2.3 JUMPERS AND CONNECTORS 8
2.4 JUMPER SETTING.....9
2.5 CONNECTORS AND PIN ASSIGNMENT 11

CHAPTER 3 GRAPHIC DRIVER INSTALLATION.....22

3.1 INSTALLATION OF GRAPHIC DRIVER.....22

CHAPTER 4 CHIPSET DRIVER INSTALLATION 26

4.1 INSTALLATION OF CHIPSET DRIVER.....26

CHAPTER 5 ETHERNET DRIVER INSTALLATION.....30

5.1 INSTALLATION OF ETHERNET DRIVER 30

CHAPTER 6 AUDIO DRIVER INSTALLATION.....35

6.1 INSTALLATION OF AUDIO DRIVER 35

CHAPTER 7 FINTEK COM PORT DRIVER INSTALLATION.41

CHAPTER 8 AMI BIOS SETUP 45

8.1 STARTING SETUP 45
8.2 ADVANCED SETTING 46
8.3 CHIPSET SETTING.....66
8.4 BOOT 71
8.5 SECURITY.....72
8.5 SAVE & EXIT.....73

CHAPTER 9 SERVICES / UPDATES 74

9.1 IC70 OFFICIAL WEBSITE.....74

9.2 COMPANY INFORMATION.....74

CHAPTER 1

General Information

This chapter includes IC70 Motherboard background information.
Sections include:

- Introduction
- Feature
- Motherboard Specification
- Function Block
- Board Dimensions

Chapter 1 General Information

1.1 Introduction

IC70 SBC is equipped with Intel HM55 Chipset which designed with Intel's mobile platform. Intel's HM55 platform delivers the performance and high scalability cutting-edge embedded computing application.

In peripheral connectivity, IC70 SBC with one PCIE x 16 and two Mini-PCIE slot, two SATA connectors, and eight Hi-Speed USB connectors.

Thus, IC70 SBC is designed to satisfy most of the applications in the industrial computer market, such as Gaming, POS, KIOSK, Industrial Automation, and Programmable Control System. It is a compact design to meet the demanding performance requirements of today's business and industrial applications.

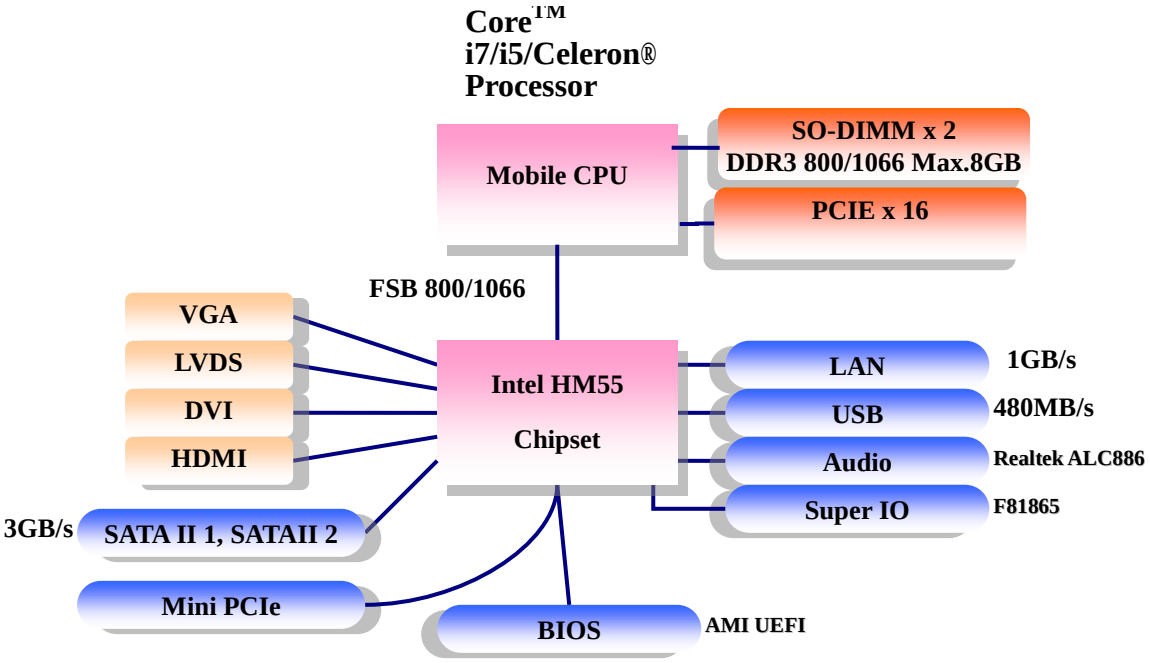
1.2 Feature

- Mini-ITX Form Factor (170mm x 170mm)
- Support Intel® Core™ i7/i5/Celeron® Processor
- System memory up to 8GB DDR3 800/1066, 2 x SO-DIMM
- Intel® 5 series Chipset (HM55)
- Integrated Gfx Gen5.75, supports DirectX 10 and OpenGL 2.1
- Dual Gigabit Ethernet
- 1 x PCIEx16 slot, 2 x Mini-PCIE, 6 x COM, 8 x USB2.0
- HDMI/DVI interface, supports max. resolution 1920 x 1200 @60Hz

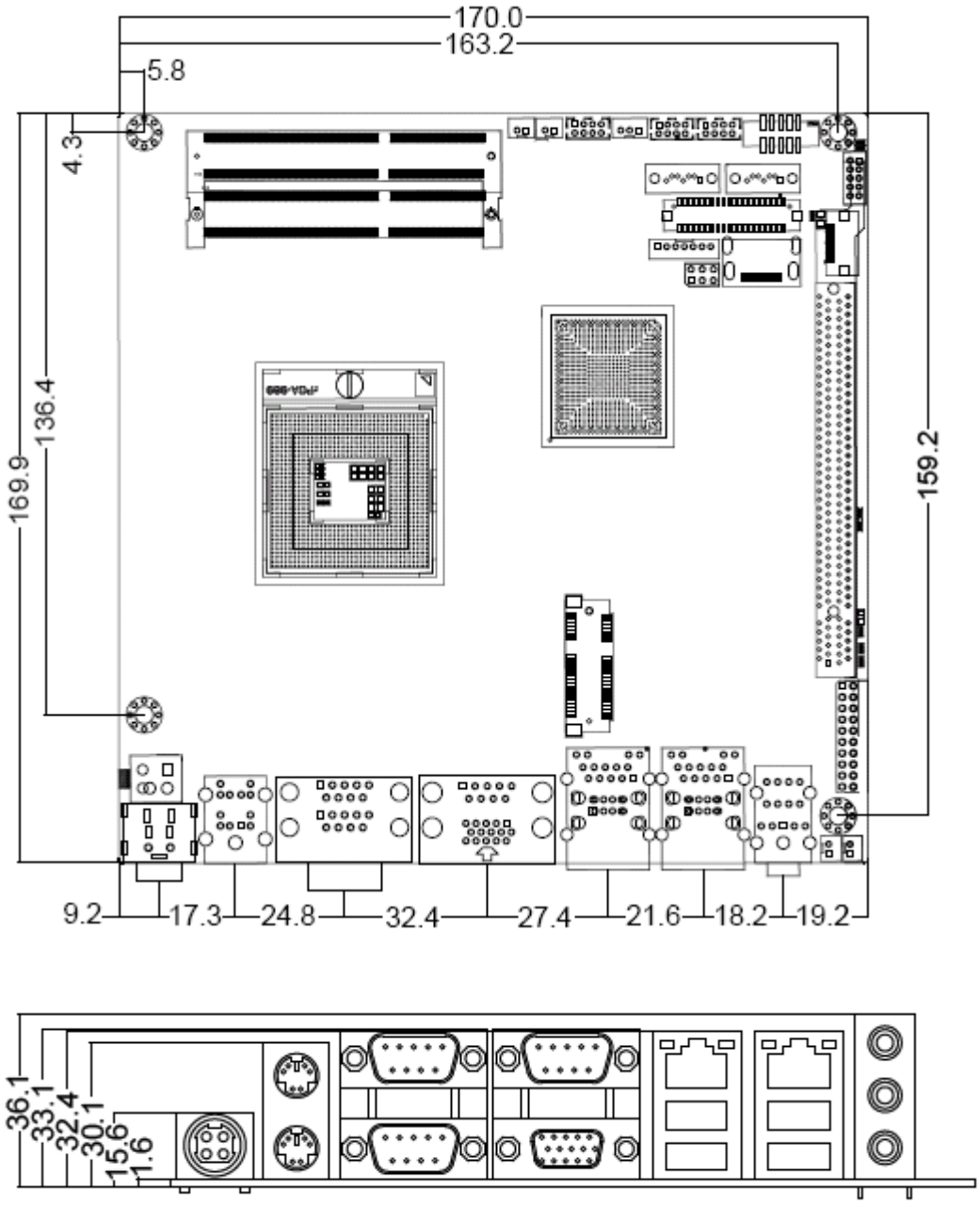
1.3 Motherboard Specifications

CPU Type	Intel® CoreTM i7/i5/Celeron® Processor
CPU FSB	1066/800 MHz
CPU Socket	Intel Socket G1(rPGA989)
Chipset	Intel® 5 series Chipset (HM55)
BIOS	AMI UEFI BIOS
VGA	Analog monitor resolution up to 2048 x 1536 @75Hz
LVDS	Dual-channel 18/24-bit LVDS, supports max resolution 1600 x 1200 @60Hz
LAN	Dual Broadcom BCM57780 PCIe GbE LAN controller
Memory Type	Two DDR3 1066/800MHz SO-DIMM supported (max. 8GB)
Super I/O	Fintek F81865
Keyboard/Mouse	2 x PS/2 Keyboard/Mouse connectors
Sound	Realtek ALC886 HD codec (Line-in, Line out, Mic-in)
USB	8 ports, USB 2.0 (4 x USB Connector, 4 x USB pin-header)
Edge Connectors	1 x +12V DC-IN Jack 2 x PS/2 connector for keyboard/mouse 2 x DB9 for COM3 & COM4 1 x VGA out connector + 1 x DB9 for COM1 2 x Gigabit LAN RJ-45 + 1 x dual USB stack connector 1 x Audio Jack for Audio (Line-in, Line-Out, Mic-in)
On Board Pin-Header Connectors	1 x 10pins pin-header for Front Panel(2x5) 1 x 3pins pin-header for CPU Fan 1 x 3pins pin-header for System FAN 1 x 8pins pin-header for 5V/12V external power(2x4) 1 x 2pins pin-header for 5V external power (Red) 1 x 2pins pin-header for 12V external power (Yellow) 1 x 4pins ATX 12V connector 2 x 2pins Audio out 2 x 8pins pin-header for USB 5/6, 7/8(2x4) 1 x 10pins pin-header for COM2(RS232)(2x5) 1 x 20pins pin-header for COM5、COM6(2x10) 1 x 40pins DF13 Connector for LVDS 1 x 3pins digital panel backlight brightness controller 1 x 7pins digital panel backlight controller 1 x 10pins pin-header for DIO(2x5) 2 x SATA connector for SATAI/II 3.0 Gb/s 1 x HDMI connecter 1 x DVI connecter by FFC
Power Connector	Input: 4-pin ATX 12V Power input
Expansion Slots	1 x PCIEx16, 2 x Mini-PCIE
Form Factor	Mini-ITX
Dimensions	170mm x 170mm
Mechanical & environmental	Operating temperature: 0 deg. C to 60 deg. C Operating Humidity: 30 ~ 90% Relative humidity, non-condensing Certification: CE, FCC, RoHS

1.4 Function Block



1.5 Board dimensions



CHAPTER 2

Installations

This chapter provides information on how to use the jumps and connectors on IC70 Motherboard.
The Sections include:

- Memory Module Installation
- I / O Equipment Installation
- Jumpers and Connectors
- Jumpers Setting
- Connectors and Pin Assignment

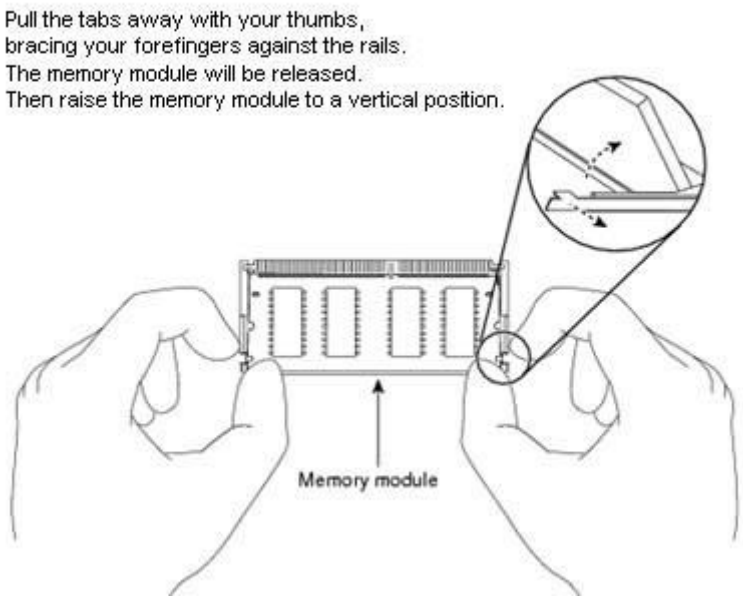
Chapter 2 Installations

2.1 Memory Module Installation

The IC70 Motherboard provides two 204-pin SODIMM slot. The socket supports up to 8GB DDR3 800/1066 SDRAM. When installing the Memory device, please follow the steps below：

Step.1. Firmly insert the SODIMM at an angle into its slot. Align the SODIMM on the slot such that the notch on the SODIMM matches the break on the slot.

Step.2. Press downwards on SODIMM until the retaining clips at both ends fully snap back in place and the SODIMM is properly seated.


Pull the tabs away with your thumbs,
bracing your forefingers against the rails.
The memory module will be released.
Then raise the memory module to a vertical position.
Memory module

2.2 I/O Equipment Installation

2.2.1 12V DC-IN

***Without power/reset OSD, short circuit pin 5 and 6 together to boot up the motherboard.**

The Motherboard allows plugging 12V DC-IN jack on the board without another power module converter under power consumption by Intel Socket G1 processor in HM55 with Intel® 5 series chipset.

2.2.2 PS/2 Keyboard and PS/2 Mouse

The Motherboard provides two PS/2 interface. The PS/2 connector supports Keyboard and Mouse. In other cases, especially in embedded applications, a mouse is not used. Therefore, the BIOS standard setup menu allows you to select* “All, But Keyboard” under the “Halt On”. This allows no-keyboard operation in embedded system applications without the system halting under POST.

2.2.3 Serial COM ports

Three RS-232 connectors build in the rear I/O. Fourth optional COM ports support RS-232. When an optional touch-screen is ordered with PPC, serial com port can connect to a serial or an optional touch-screen. One optional COM port supports RS232/422/485 choice through jumper setting.

2.2.4 Internal VGA

The Motherboard has one VGA port that can be connected to an external CRT/ LCD monitor. Use VGA cable to connect to an external CRT / LCD monitor, and connect the power cable to the outlet. The VGA connector is a standard 15-pin D-SUB connector.

2.2.5 Ethernet interface

The Motherboard is equipped with Broadcom BCM57780 chipset which is fully compliant with the PCI 10/100/1000 Mbps Ethernet protocol compatible. It is supported by major network operating systems. The Ethernet ports provide two standard RJ-45 jacks.

2.2.6 USB ports

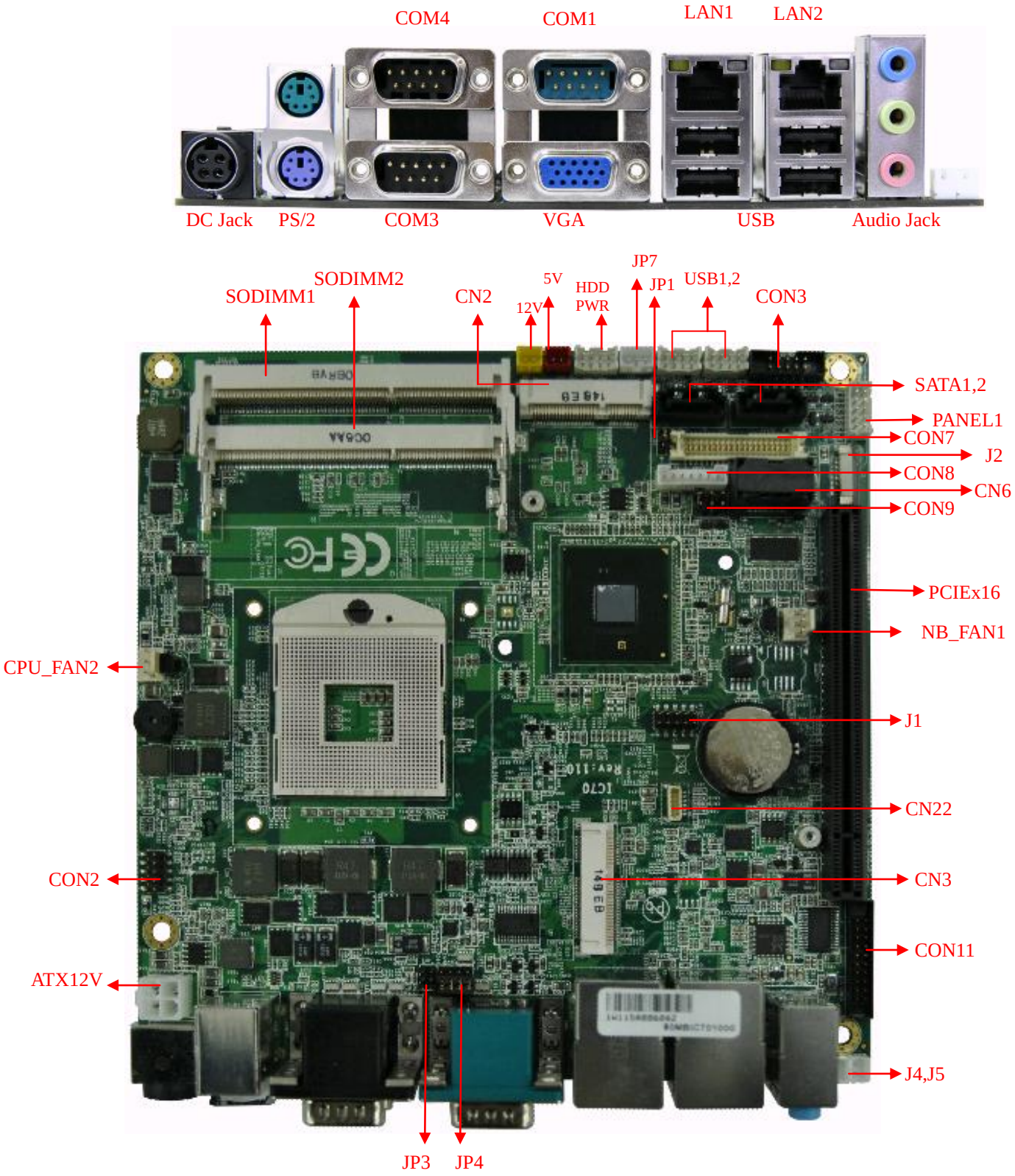
Eight USB devices (four with pin headers) may be connected to the system though an adapter cable. Various adapters may come with USB ports. USB usually connect the external system to the system. The USB ports support hot plug-in connection. Whatever, you should install the device driver before you use the device.

2.2.7 Audio Jack (Pin-header)

The Audio 5.1 channel capabilities are provided by a Realtek ALC886 chipset supporting digital audio outputs. The audio interface includes Mic-in,: line-in and line-out.

2.3 Jumpers and Connectors

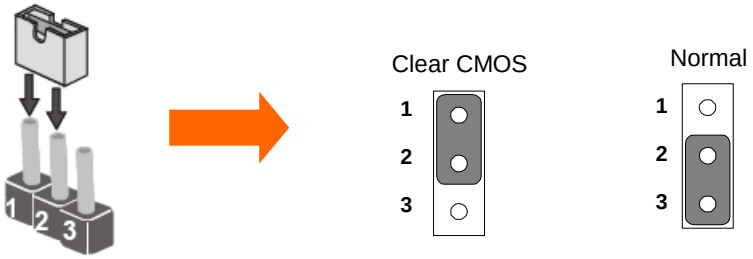
TOP



2.4 Jumper Setting

A pair of needle-nose pliers may be helpful when working with jumpers. If you have any doubts about the best hardware configuration for your application, contact your local distributor or sales representative before you make any changes. Generally, you simply need a standard cable to make most connections.

The jumper setting diagram is as below. If a jumper shorts pin 1 and pin 2, the setting diagram is shown as the right one.

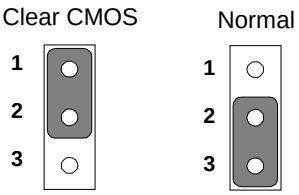


The following tables list the function of each of the board's jumpers.

Label	Function	Note
JP1	Clear CMOS	3x1 header , pitch 2.0mm
JP3	RS232 / RS422 / RS485 Selector	2x3 header , pitch 2.0mm
JP4	RS232 / RS422 / RS485 Selector	3x4 header , pitch 2.0mm
CON9	LVDS VOLTAGE	2x3 header , pitch 2.0mm

2.4.1 JP1: Clear CMOS

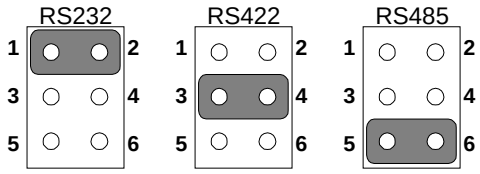
User must make sure the power supply to turn off the power supply before setting Clear CMOS. Users remember to setting jumper back to Normal before turning on the power supply. Default: 2 short 3.



Pin No.	Functions
1 Short 2	Clear CMOS
2 Short 3	Normal

JP3 : COM1 RS232 / RS422 / RS485 Function Selector

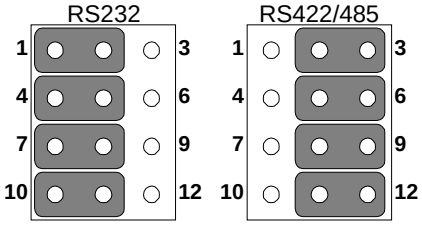
The jumper can be configured to operate COM1 in RS-232/422/485 mode. And the setting must be cooperated with the 2.4.2 settings. Default 1 short 2.



Pin No.	Functions
1 Short 2	RS232
3 Short 4	RS422
5 Short 6	RS485

2.4.2 JP4: RS232 / RS422 / RS485 Selector

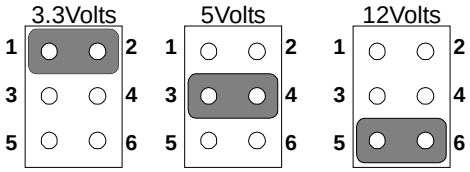
The jumper can be configured to operate COM1 in RS-232/422/485 mode. And the setting must be cooperated with JP3 settings.



RS232	RS422/485
1-2	2-3
4-5	5-6
7-8	8-9
10-11	11-12

2.4.3 CON9: LCD Panel Voltage Select

CON9 can be configured to operate in 3.3Volts / 5Volts / 12Volts mode.



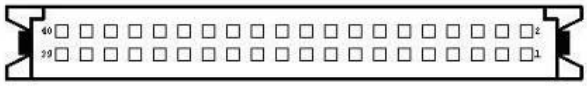
Pin No.	Functions
1 Short 2	3.3Volts Selected
3 Short 4	5Volts Selected
5 Short 6	12Volts Selected

2.5 Connectors and Pin Assignment

The table below lists the function of each of the board's connectors.

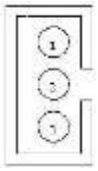
Label	Function	Note
CON7	LVDS LCD Output Connector	DF13-40DP-1.25V
JP7	Digital Panel Backlight Brightness Control	3x1 header, pitch 2.54mm
CON8	Inverter Connecter	7x1 header, pitch 2.54mm
CON3	Serial port COM2	10pin COM port
CON11	Serial port COM5,6	20 Pin COM port
USB	USB PIN HEADER	4x2 Pin Header
FAN1_NB	FAN CONNECTOR	3x1 Pin Header
FAN2_CPU	FAN CONNECTOR	3x1 Pin Header
PANEL1	System Function Connector	5x2 header ,pitch 2.0mm
J4	Front Audio (Right)	1x2 header ,pitch 2.54mm
J5	Front Audio (Left)	1x2 header ,pitch 2.54mm
12V (Yellow)	12V External Power	2x1 header, pitch 2.54mm
5V(Red)	5V External Power	2x1 header, pitch 2.54mm
HDD PWR	5V/12V External Power	4x2 header ,pitch 2.54mm
CON2	Digital I/O	10 pin Digital I/O function
CN2	Mini-PCIE	Half size
CN3	Mini-PCIE	Full size
CN22	SIM card connector	6 pin Header
J2	DVI FFC	18 pin FFC
CN6	HDMI CONNECTOR	19 pin HDMI port
ATX12V	12V DC Connector	2x2 Pin Connecter

2.5.1 CN7: LVDS Connector



Pin No.	SYMBOL	Pin No.	SYMBOL
1	LCDVDD	2	LVDS_TXL0N
3	LCDVDD	4	LVDS_ TXL0P
5	LCDVDD	6	LVDS_ TXL1N
7	GND	8	LVDS_ TXL1P
9	GND	10	LVDS_ TXL2N
11	GND	12	LVDS_ TXL2P
13	GND	14	LVDS_TXLCKN
15	GND	16	LCDS_ TXLCKP
17	GND	18	LVDS_ TXL3N
19	GND	20	LVDS_ TXL3P
21	GND	22	LVDS_TXU0N
23	GND	24	LVDS_ TXU0P
25	GND	26	LVDS_ TXU1N
27	GND	28	LVDS_ TXU1P
29	GND	30	LVDS_ TXU2N
31	GND	32	LVDS_ TXU2P
33	GND	34	LVDS_TXUCKN
35	GND	36	LVDS_TXUCKP
37	GND	38	LVDS_TXU3N
39	GND	40	LVDS_TXU3P

2.5.2 JP7: Digital Panel Backlight Brightness Control

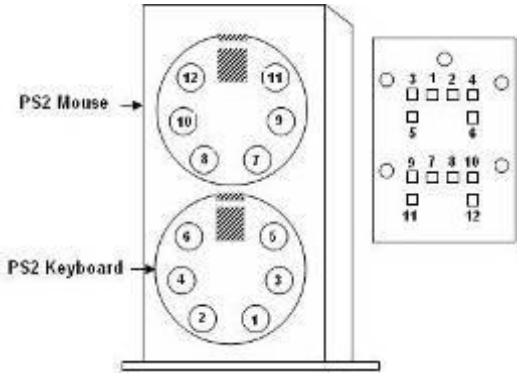


Pin No.	SYMBOL
1	VCC(5V)
2	Black Light Control
3	GND

2.5.3 CON8: Digital Panel Backlight Control

Pin No.	SYMBOL
1	+12V
2	+12V
3	+12V
4	GND
5	Black Light Control
6	GND
7	Black Light EN 5V

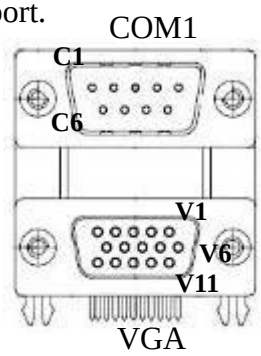
2.5.4 PSKBM1: PS2 Keyboard/Mouse Connector



PS/2 Keyboard		PS/2 Mouse	
Pin No.	SYMBOL	Pin No.	SYMBOL
1	KDATA	7	MDATA
2	NC1	8	NC3
3	Ground	9	Ground
4	5V	10	5V
5	KBCLK	15	MSCLK
6	NC2	16	NC4

2.5.5 D-SUB Dual Output

The serial port COM1, which is option for RS232 / RS422 / RS485, is the Winbond I/O serial port.



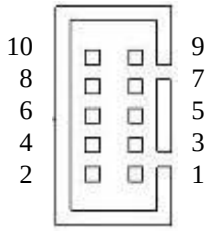
Up: 9(Male)

Down: 15(Female)

Pin No.	SYMBOL	Pin No.	SYMBOL
C1	DCD4/485TXRX-	V1	R
C2	SRD4/485TXRX+	V2	G
C3	STD4/422RX+	V3	B
C4	DTR4/422RX-	V4	NA
C5	GND	V5	GND
C6	NDSRA	V6	GND
C7	NRTSA	V7	GND
C8	NCTSA	V8	GND
C9	NRIA	V9	LVGA5V
		V10	GND
		V11	NA
		V12	DDC_DATA
		V13	CRT_HS
		V14	CRT_VS
		V15	DDC_CLK

2.5.6 CON3: Serial port COM2

The serial port COM2, which is Winbond I/O support, is RS232 only.



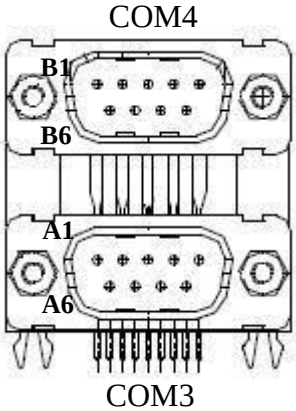
Pin	SYMBOL	Pin	SYMBOL
10	GND	9	GND
8	NRI1A	7	NDTR1A
6	NCTS1A	5	NTXD1A
4	NRTS1A	3	NRXD1A
2	NDSR1A	1	NDCD1A

2.5.7 CON11: Serial port COM5、COM6

Pin No.	SYMBOL	Pin No.	SYMBOL
20	GND	19	GND
18	NRI1A	17	NDTR1A
16	NCTS1A	15	NTXD1A
14	NRTS1A	13	NRXD1A
12	NDSR1A	11	NDCD1A
10	GND	9	GND
8	NRIA	7	NDTRA
6	NCTSA	5	NTXDA
4	NRTSA	3	NRXDA
2	NDSRA	1	NDCDA

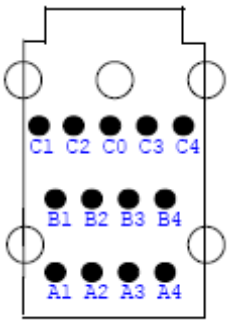
2.5.8 D-SUB Dual Serial Port

The serial port COM3/4, RS232 only, from A1 to A9 is COM3, and B1 to B9 is COM4, which is supported by Fintek.



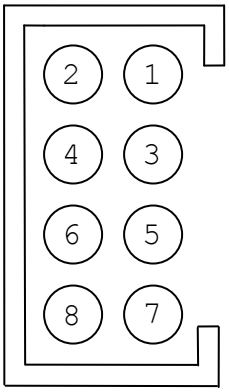
Pin No.	SYMBOL	Pin No.	SYMBOL
A1	FK_NDCD1	B1	FK_NDCD2
A2	FK_NSIN1	B2	FK_NSIN2
A3	FK_NSOUT1	B3	FK_NSOUT2
A4	FK_NDTR1	B4	FK_NDTR2
A5	GND	B5	GND
A6	FK_NDSR1	B6	FK_NDSR2
A7	FK_NRTS1	B7	FK_NRTS2
A8	FK_NCTS1	B8	FK_NCTS2
A9	FK_NRI1	B9	FK_NRI2

2.5.9 AUDIO401: Audio Jack (Pin-header)



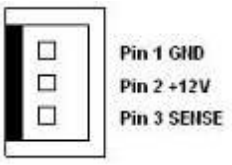
Color	Signal
Blue	Line In
Green	Line Out
Pink	Microphone In
Pin-Header	
C0~C4	Line in
B1~B4	Line out
A1~A4	Mic in

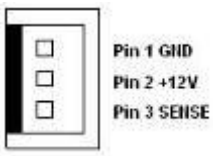
2.5.10 USB: USB PIN HEADER



USB1			
Pin	SYMBOL	Pin	SYMBOL
2	USB 5V	1	USB 5V
4	USB_DATA1-	3	USB_DATA0-
6	USB_DATA1+	5	USB_DATA0+
8	GND	7	GND

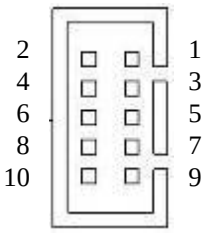
2.5.11 FAN1_NB/FAN2_CPU: FAN CONNECTOR





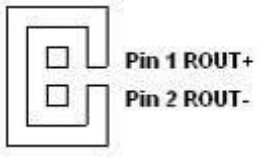
FAN1_NB **FAN2_CPU**

2.5.12 PANEL1: Front Panel System Function Connector (Power/Reset)

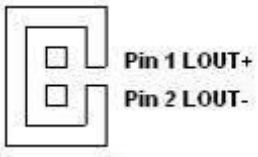


Pin	SYMBOL	Pin	SYMBOL
2	HD_LED+	1	PW_LED+
4	HD_LED-	3	PW_LED-
6	RT_BT1	5	PW_BT1
8	RT_BT2	7	PW_BT2
10	5VSB	9	RSEV

2.5.13 J4/J5: Front Audio

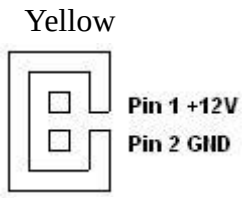


J4

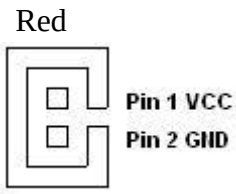


J5

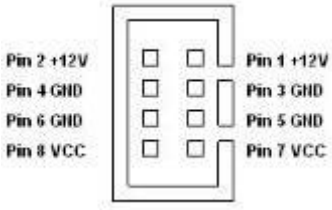
2.5.14 5V/12V/HDD PWR: External Power



12V

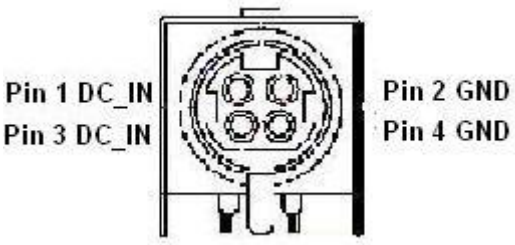


5V

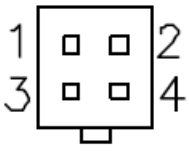


HDD PWR

2.5.15 PWIN1: DC Jack (+12V) / Input

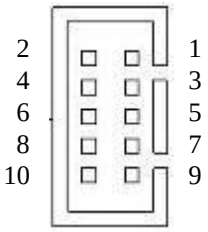


2.5.16 ATX_PWR / Input: 12V DC Connector



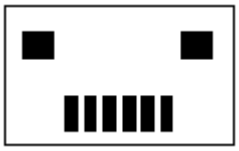
Pin	SYMBOL
1	Ground
2	Ground
3	+12V
4	+12V

2.5.17 : CN2: Digital I/O Connector



Pin	SYMBOL	Pin	SYMBOL
2	5V	1	GND
4	Out1	3	Out3
6	Out0	5	Out2
8	IN1	7	IN3
10	IN0	9	IN2

2.5.18 : CN22:SIM card connector



CN22

Pin Number	Signal Name
1	VREG_USIM
2	MSM_USIM_RESET
3	MSM_USIM_CLK
4	GND
5	MSM_USIM_VPP
6	MSM_USIM_DATA

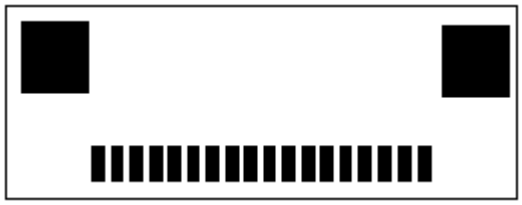
2.5.19 : CN2: Half Size Mini-PCIE slot

Pin Number	Signal Name	Pin Number	Signal Name
2	3.3V_MINIPCIE1	1	PCIE_WAKE#
4	GND	3	NA
6	+V1.5S	5	NA
8	VREG_USIM	7	CLK_SLOT4_OE#
10	NA	9	GND
12	NA	11	CLK_PCIE_SLOT4_N
14	NA	13	CLK_PCIE_SLOT4_P
16	NA	15	GND
18	GND	17	NA
20	WLAN-RFON2	19	NA
22	BUF_PLT_RST2#	21	GND
24	+V3.3A	23	PCIE_RXN3_SLOT4
26	GND	25	PCIE_RXP3_SLOT4
28	+V1.5S	27	GND
30	SMB_CLK	29	GND
32	SMB_DATA	31	PCIE_TXN3_SLOT4
34	GND	33	PCIE_TXP3_SLOT4
36	USB_PN5	35	GND
38	USB_PP5	37	GND
40	GND	39	3.3V_MINIPCIE1
42	NA	41	3.3V_MINIPCIE1
44	NA	43	GND
46	NA	45	NA
48	NA	47	NA
50	GND	49	NA
52	3.3V_MINIPCIE1	51	NA
m2	GND	m1	GND

2.5.20 ：CN3: Full Size 3.5G Module

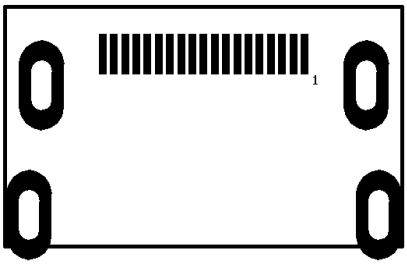
Pin Number	Signal Name	Pin Number	Signal Name
2	3.3V_MINIPCIE1	1	PCIE_WAKE#
4	GND	3	NA
6	+V1.5S	5	NA
8	VREG_USIM	7	CLK_SLOT3_OE#
10	MSM_USIM_DATA	9	GND
12	MSM_USIM_CLK	11	CLK_PCIE_SLOT3_N
14	MSM_USIM_RESET	13	CLK_PCIE_SLOT3_P
16	MSM_USIM_VPP	15	GND
18	GND	17	NA
20	WLAN-RFON1	19	NA
22	BUF_PLT_RST2#	21	GND
24	+V3.3A	23	PCIE_RXN3_SLOT3
26	GND	25	PCIE_RXP3_SLOT3
28	+V1.5S	27	GND
30	SMB_CLK	29	GND
32	SMB_DATA	31	PCIE_TXN3_SLOT3
34	GND	33	PCIE_TXP3_SLOT3
36	USB_PN4	35	GND
38	USB_PP4	37	GND
40	GND	39	3.3V_MINIPCIE1
42	NA	41	3.3V_MINIPCIE1
44	NA	43	GND
46	NA	45	NA
48	NA	47	NA
50	GND	49	NA
52	3.3V_MINIPCIE1	51	NA
m2	GND	m1	GND

2.5.21 : J2: DVI FFC



Pin Number	Signal Name	Pin Number	Signal Name
2	DVIC_TMDS0	1	GND
4	GND	3	DVIC_TMDS0+
6	DVI_DDC_DATA	5	DVI_DDC_CLK
8	DVIC_TMDS1	7	GND
10	GND	9	DVIC_TMDS1+
12	DVIC_TMDS2+	11	DVIC_TMDS2-
14	DVIC_CLK+	13	GND
16	DVI_HPD2	15	DVIC_CLK
18	+5VS	17	+5VS

2.5.22 :CN6: HDMI



Pin Number	Signal Name	Pin Number	Signal Name
2	GND	1	HDMIB_TMDS0+
4	HDMIB_TMDS1+	3	HDMIB_TMDS0-
6	HDMIB_TMDS1-	5	GND
8	GND	7	HDMIB_TMDS2+
10	HDMIB_CLK+	9	HDMIB_TMDS2-
12	HDMIB_CLK-	11	GND
14	RESERVED	13	GND
16	HDMI_DDC_DATA	15	HDMI_DDC_CLK
18	5V_HDMI	17	GND
20	NA	19	HDMI_HPD1

CHAPTER 3

Graphic Driver Installation

This chapter offers information on the chipset software Installation utility

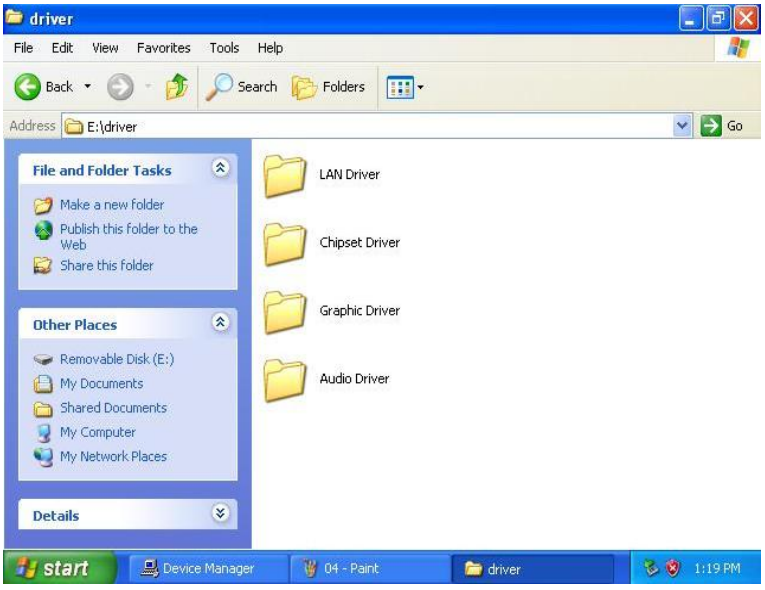
- Installation of Graphic Driver

Chapter 3 Graphic Driver Installation

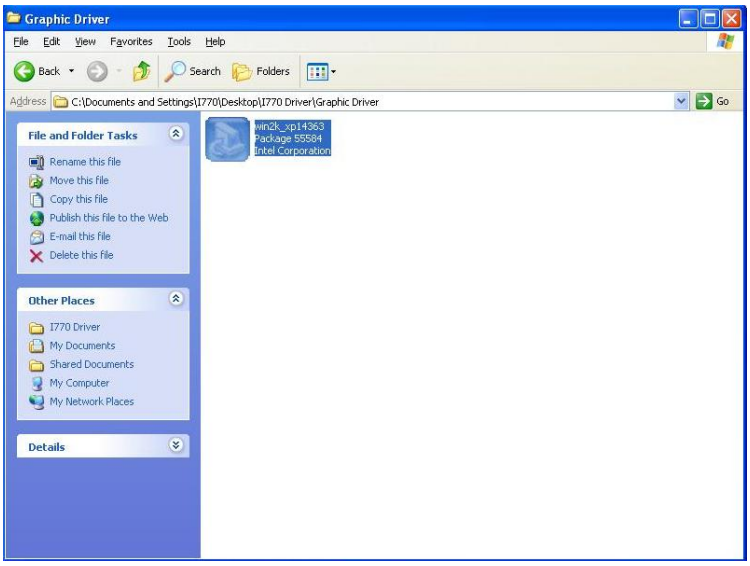
3.1 Installation of Graphic Driver

IC70 Motherboard is equipped with Intel GM45 / ICH9M-E Companion Device. The Intel Graphic Drivers should be installed first, and it will enable “Video Controller (VGA compatible). Follow the instructions below to complete the installation. You will quickly complete the installation.

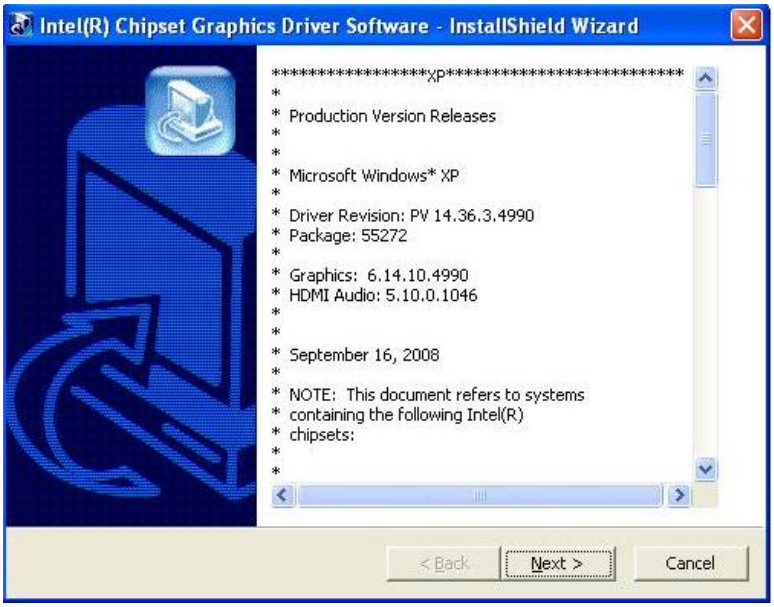
Step.1. Insert the CD that comes with the Motherboard. Open the file document “Graphic Driver “.



Step.2. Click on “winxp_14428” to execute the setup.



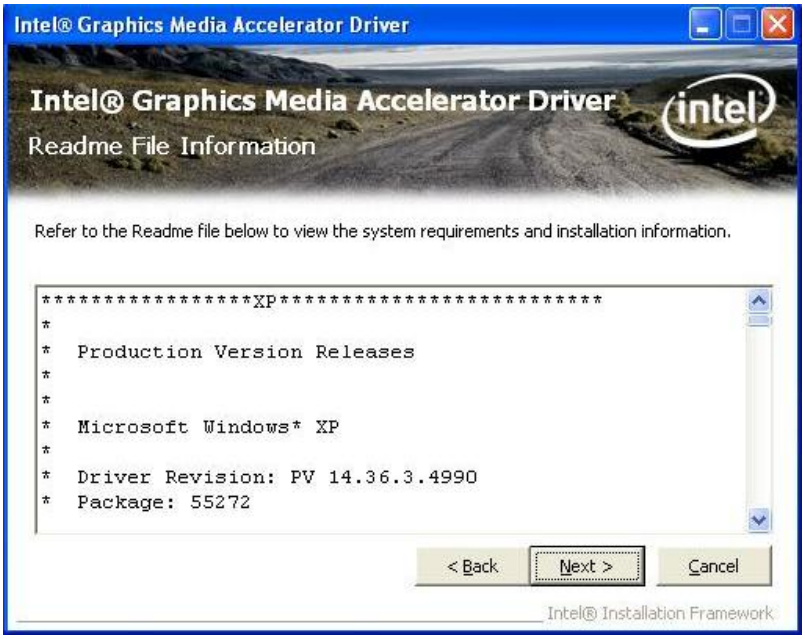
Step.3. Click on “Next “ to install Driver.



Step.4. Click on “Next “ to install Driver.

Intel® Graphics Media Accelerator Driver
Intel® Graphics Media Accelerator Driver
intel
Welcome to the Setup Program
This setup program will install the Intel® Graphics Media Accelerator Driver onto this computer. It is strongly recommended that you exit all programs before continuing. Click Next to continue.
< Back
Next >
Cancel
Intel® Installation Framework

Step.5. Click on “Yes “ to agree License.


Intel® Graphics Media Accelerator Driver
Intel® Graphics Media Accelerator Driver
Readme File Information
Refer to the Readme file below to view the system requirements and installation information.
**********XP**********
* Production Version Releases
* Microsoft Windows* XP
* Driver Revision: PV 14.36.3.4990
* Package: 55272
< Back
Next >
Cancel
Intel® Installation Framework

Step.7. Click on “Yes, I want to restart this computer now“ to go on.

Intel® Graphics Media Accelerator Driver
Intel® Graphics Media Accelerator Driver
Setup Is Complete
You must restart this computer for the changes to take effect. Would you like to restart the computer now?
Yes, I want to restart this computer now.
No, I will restart this computer later.
Click Finish, then remove any installation media from the drives.
Finish
Intel® Installation Framework

CHAPTER 4

Chipset Driver Installation

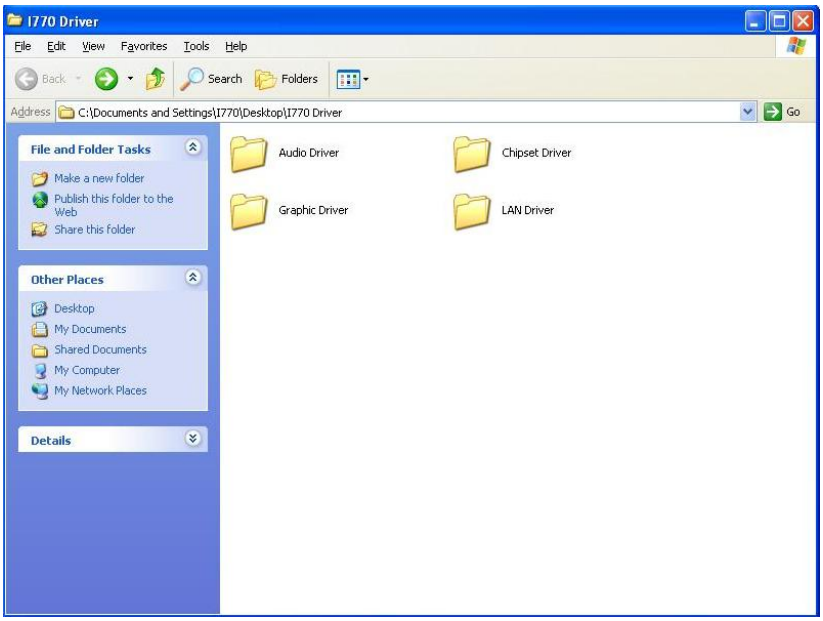
This chapter offers information on the chipset software Installation utility

- Installation of Chipset Driver

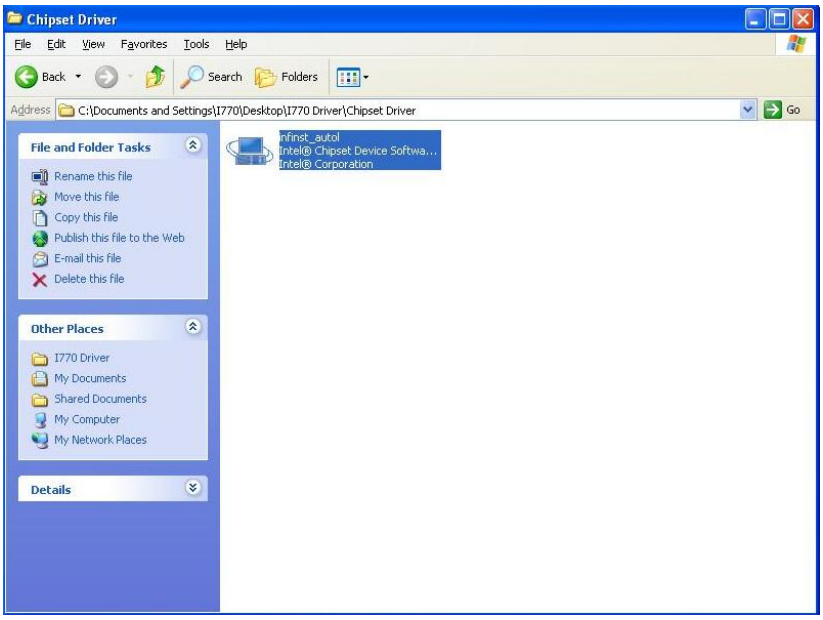
Chapter 4 Chipset Driver Installation

4.1 Installation of Chipset Driver

Setp.1. Insert the CD that comes with the motherboard. Open the file document "Chipset Driver".



Setp.2. Click on "Setup" to install driver.



Setp.3. Click on “Next“ to install driver.

Intel® Chipset Device Software
Intel® Chipset Device Software
intel
Welcome to the Setup Program
This setup program will install the Intel® Chipset Device Software onto this computer. It is strongly recommended that you exit all Windows* programs before continuing.
< Back
Next >
Cancel
Intel® Installation Framework

Setp.4. Click on “Yes “ to agree License

Intel® Chipset Device Software
Intel® Chipset Device Software
License Agreement
intel
You must accept all of the terms of the license agreement in order to continue the setup program. Do you accept the terms?
INTEL SOFTWARE LICENSE AGREEMENT (OEM / IHV / ISV Distribution & Single User)
IMPORTANT - READ BEFORE COPYING, INSTALLING OR USING.
Do not use or load this software and any associated materials (collectively, the "Software") until you have carefully read the following terms and conditions. By loading or using the Software, you agree to the terms of this Agreement. If you do not wish to so agree, do not install or use the Software.
Please Also Note:
* If you are an Original Equipment Manufacturer (OEM), Independent Hardware Vendor (IHV), or Independent Software Vendor (ISV), this complete LICENSE AGREEMENT applies;
< Back
Yes
No
Intel® Installation Framework

Setp.5. Click on “Next“ to install driver.

Intel® Chipset Device Software
Intel® Chipset Device Software
Readme File Information
Refer to the Readme file below to view the system requirements and installation information.
Press the Page Down key to view the rest of the file.
****
* Product: Intel(R) Chipset Device Software
* Release: Production Version
* Version: 9.0.0.1008
* Target Chipset#: Intel(R) 4 Series Chipset
* Date: May 01 2008
****
< Back
Next >
Cancel
Intel® Installation Framework

Step.7. Click on “Yes, I want to restart this computer now“ to go on.

Intel® Chipset Device Software
Intel® Chipset Device Software
Setup Is Complete
You must restart this computer for the changes to take effect. Would you like to restart the computer now?
Yes, I want to restart this computer now.
No, I will restart this computer later.
Click Finish, then remove any installation media from the drives.
Finish
Intel® Installation Framework

CHAPTER 5

Ethernet Driver Installation

This chapter offers information on the Ethernet software installation utility.
Sections include:

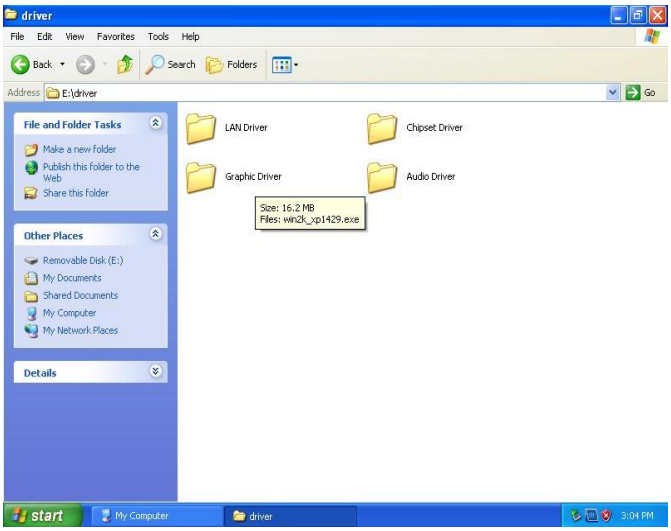
- Installation of Ethernet Driver

Chapter 5 Ethernet Driver Installation

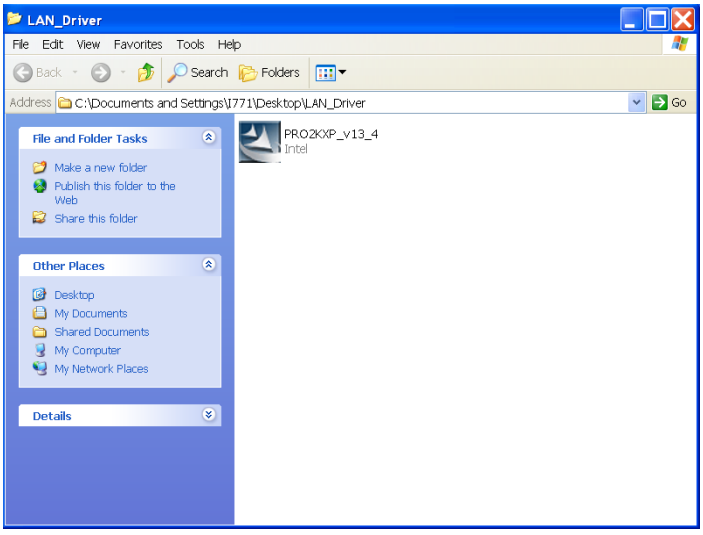
5.1 Installation of Ethernet Driver

The Users must make sure which operating system you are using in the IC70 Motherboard before installing the Ethernet drivers. Follow the steps below to complete the installation of the Broadcom BCM57780 LAN drivers. You will quickly complete the installation.

Step.1. Insert the CD that comes with the motherboard. Open the file document “LAN Driver”.



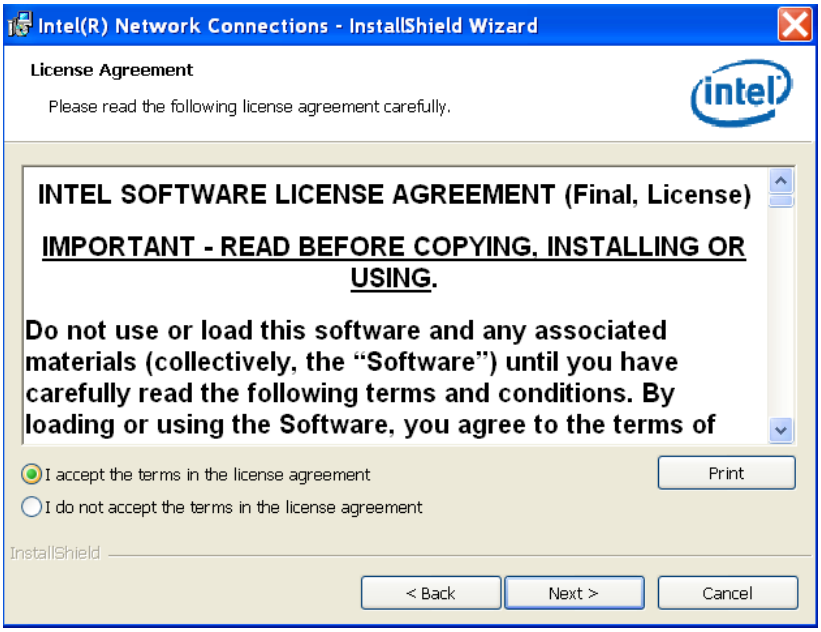
Step.2 Click on “Setup” to execute the setup.



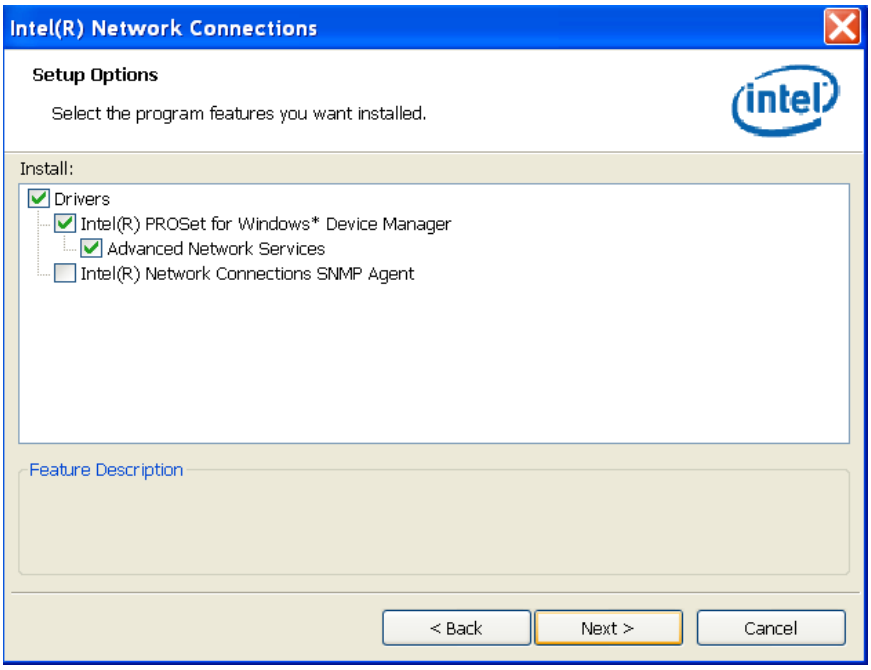
Step.3. Click on “Next“ to install driver.

Intel(R) Network Connections - InstallShield Wizard
Welcome to the InstallShield Wizard for
Intel(R) Network Connections
Installs drivers, Intel(R) PROSet for Windows* Device Manager,
and Advanced Networking Services.
WARNING: This program is protected by copyright law and
international treaties.
InstallShield
< Back
Next >
Cancel

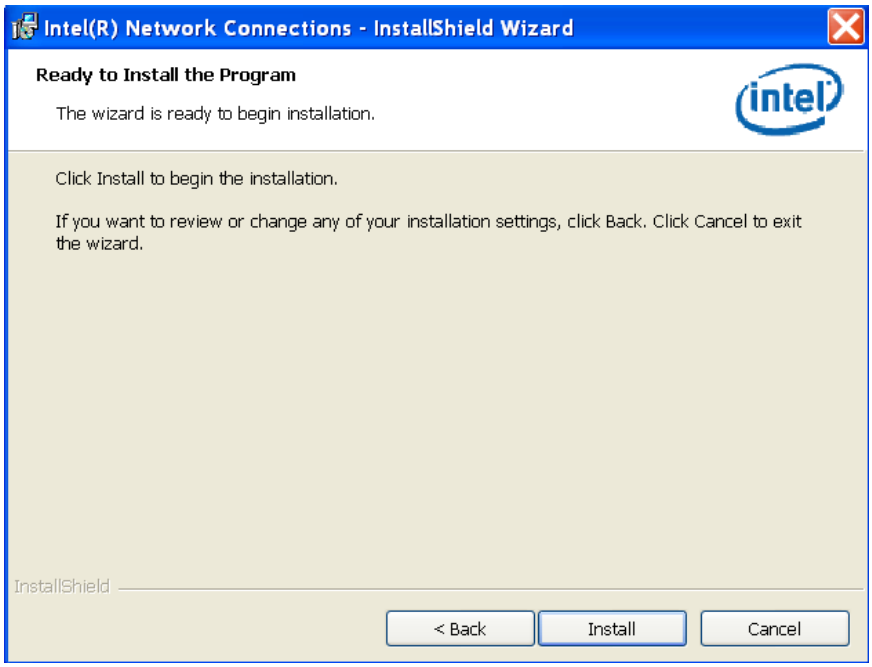
Step.4. Click on “I accept the terms in the license agreement.”


Intel(R) Network Connections - InstallShield Wizard
License Agreement
Please read the following license agreement carefully.
INTEL SOFTWARE LICENSE AGREEMENT (Final, License)
IMPORTANT - READ BEFORE COPYING, INSTALLING OR USING.
Do not use or load this software and any associated materials (collectively, the “Software”) until you have carefully read the following terms and conditions. By loading or using the Software, you agree to the terms of
I accept the terms in the license agreement
I do not accept the terms in the license agreement
Print
InstallShield
< Back
Next >
Cancel

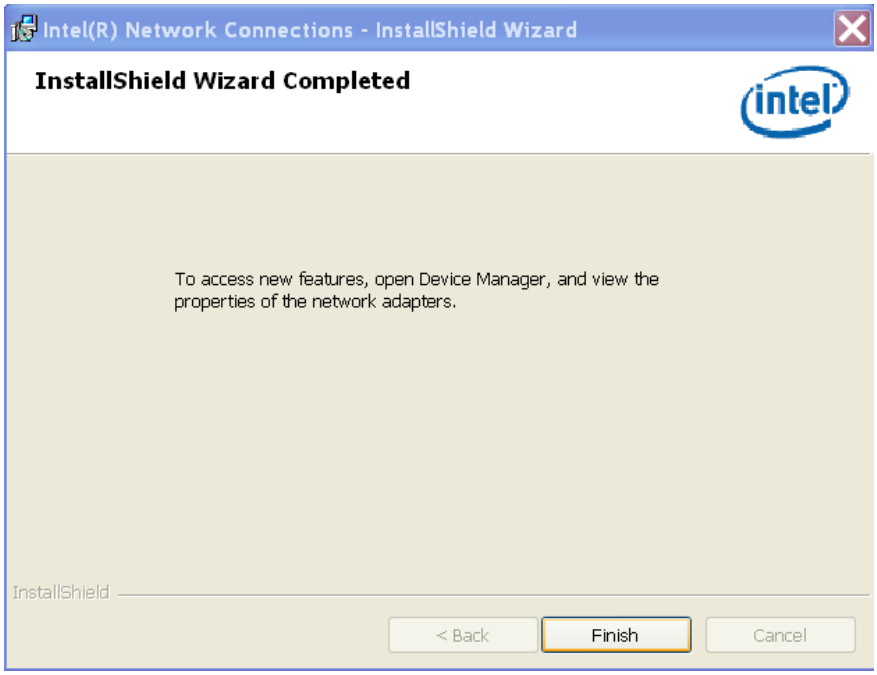
Setp.5. Click on “Advanced Network Services“ and go on.



Setp.6. Click on “Next“ to install driver.


Intel(R) Network Connections - InstallShield Wizard
Ready to Install the Program
The wizard is ready to begin installation.
Click Install to begin the installation.
If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.
InstallShield
< Back
Install
Cancel

Setp.7. Click on “Finish“.



CHAPTER 6

Audio Driver Installation

This chapter offers information on the Audio software installation utility.
Sections include:

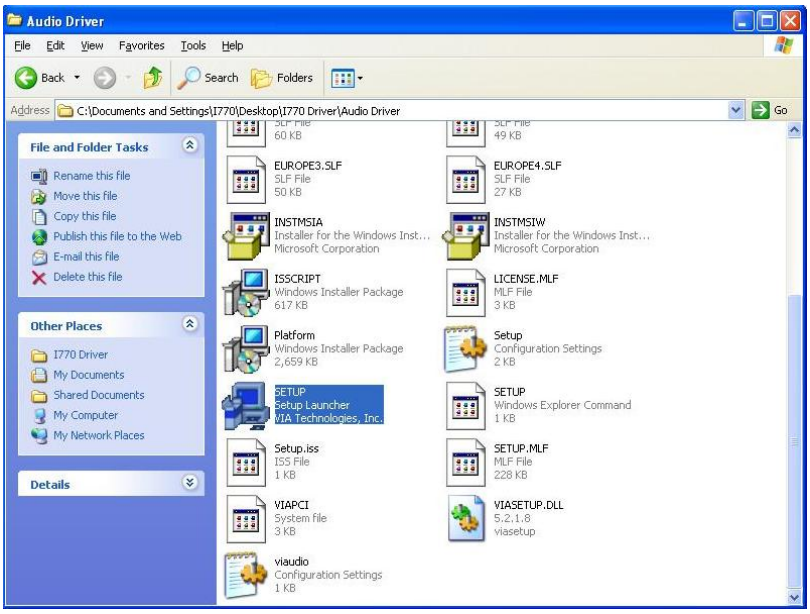
- Installation of Audio Driver

Chapter 6 Audio Driver Installation

6.1 Installation of Audio Driver

The users must make sure which operating system you are using in the IC70 Motherboard before installing the Audio drivers. Follow the steps below to complete the installation of the VIA VT1708B Audio drivers. You will quickly complete the installation.

Step.1. Insert the CD that comes with the motherboard. Open the file “Audio driver” and click on “Setup” to execute the setup.



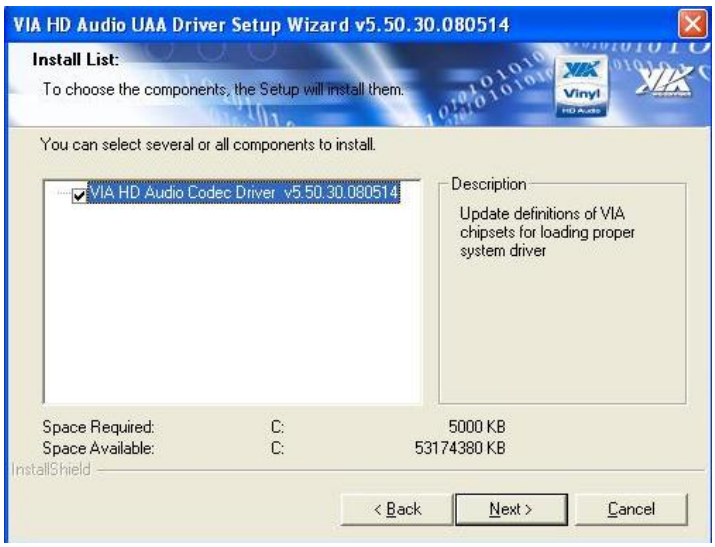
Step.2. Click on “Next“ to install driver.

VIA HD Audio UAA Driver Setup Wizard v5.50.30.080514
Welcome to the Install Wizard for VIA HD Audio UAA Driver Setup Program
The Install Wizard will install VIA HD Audio UAA Driver Setup Program on your computer. To continue, click Next.
U-Version:5.2.1.27
< Back
Next >
Cancel

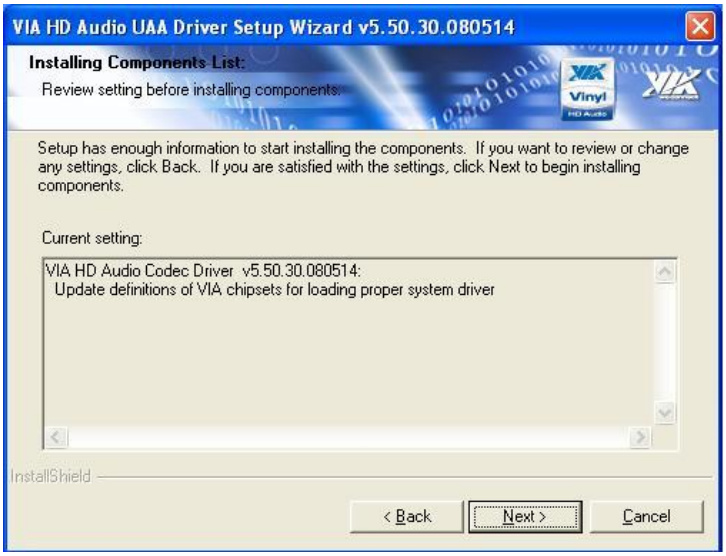
Step.3. Click on “Yes “ to agree License

VIA HD Audio UAA Driver Setup Wizard v5.50.30.080514
License Agreement
Please read the following license agreement carefully.
Press the PAGE DOWN key to see the rest of the agreement.
VIA SOFTWARE LICENSE AGREEMENT
Please read carefully before you download, install, or use any VIA SOFTWARE.VIA SOFTWARE means the software program you are currently trying to download, and all related updates supplied by VIA Technologies, Inc. ("VIA").
By clicking on the "I AGREE" button, and by downloading and installing the VIA SOFTWARE, you accept all the terms and conditions of this Agreement. If you do not agree to the terms and conditions of this Agreement, do not click the "I AGREE"
I Agree
I Don't Agree
InstallShield
< Back
Next >
Cancel

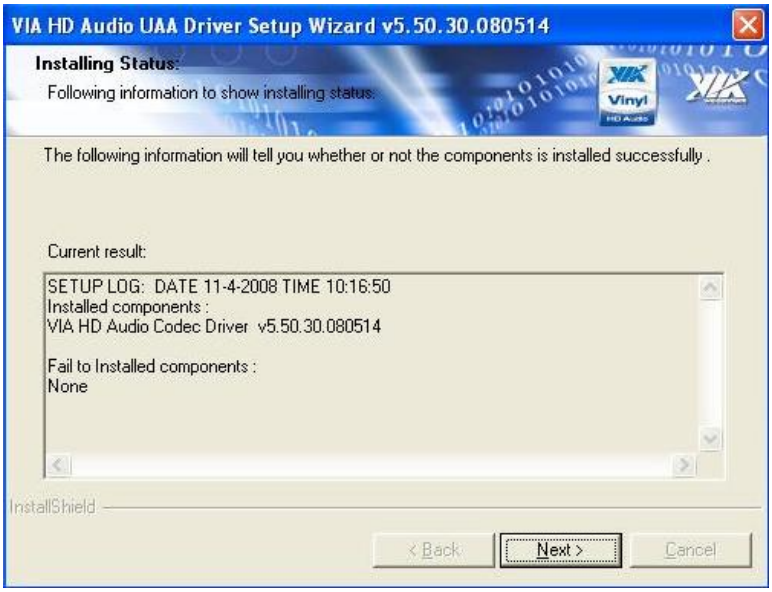
Step.4. Click on “Next“ to install driver.


VIA HD Audio UAA Driver Setup Wizard v5.50.30.080514
Install List:
To choose the components, the Setup will install them.
You can select several or all components to install.
VIA HD Audio Codec Driver v5.50.30.080514
Description
Update definitions of VIA chipsets for loading proper system driver
Space Required: C: 5000 KB
Space Available: C: 53174380 KB
InstallShield
< Back
Next >
Cancel

Step.5. Click on “Next“ to install driver.


VIA HD Audio UAA Driver Setup Wizard v5.50.30.080514
Installing Components List:
Review setting before installing components.
Setup has enough information to start installing the components. If you want to review or change any settings, click Back. If you are satisfied with the settings, click Next to begin installing components.
Current setting:
VIA HD Audio Codec Driver v5.50.30.080514:
Update definitions of VIA chipsets for loading proper system driver
InstallShield
< Back
Next >
Cancel

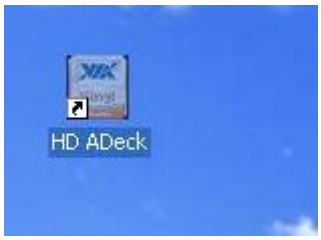
Step.6. Click on “Next“ to install driver.


VIA HD Audio UAA Driver Setup Wizard v5.50.30.080514
Installing Status:
Following information to show installing status.
The following information will tell you whether or not the components is installed successfully .
Current result:
SETUP LOG: DATE 11-4-2008 TIME 10:16:50
Installed components :
VIA HD Audio Codec Driver v5.50.30.080514
Fail to Installed components :
None
InstallShield
< Back
Next >
Cancel

Step.7 Click on “Yes, I want to restart this computer now“ to go on.

VIA HD Audio UAA Driver Setup Wizard v5.50.30.080514
Install Wizard Completed.
The Install Wizard has successfully installed VIA HD Audio UAA Driver Setup Program. Before you can use the program, you must restart your computer.
Yes, I want to restart my computer now.
No, I will restart my computer later.
Remove any disks from their drives, and then click Finish to complete setup.
< Back
Finish
Cancel

Step.9 After restart computer, cliick on “HD ADeck “ to set up Line in/Mic in.



Step.10 Select ” Analog to the Line out “ and click “ Next page”

Step.11 Select ” Analog to the Line out “ and move the bar.

CHAPTER 7

Fintek COM Port Driver Installation

This chapter describes the step by step method to install the Fintek COM port driver.

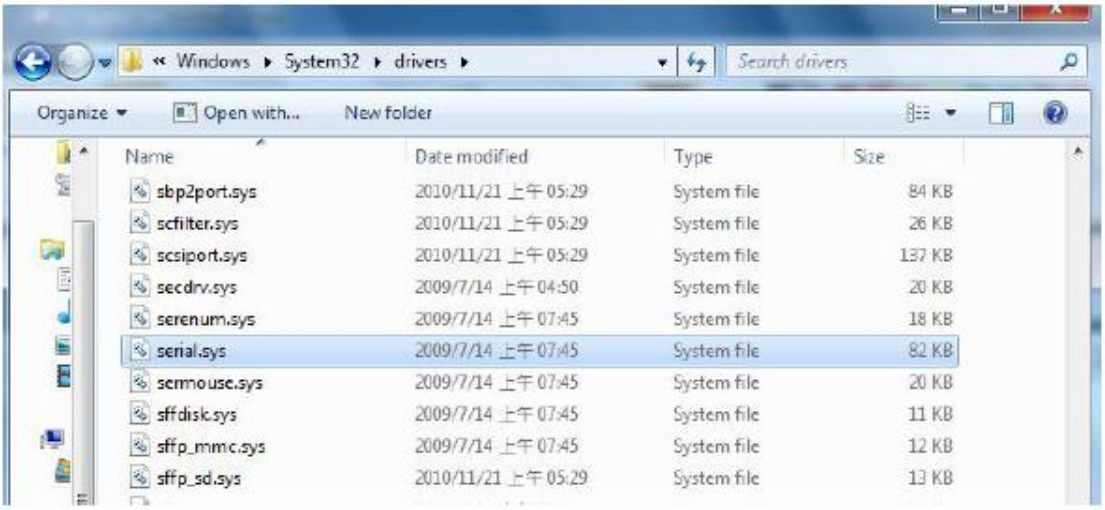
Chapter 7 Fintek COM Port Driver Installation

STEP 1.If the system is WIN7 please first do close UAC.(Refer following "Disabling

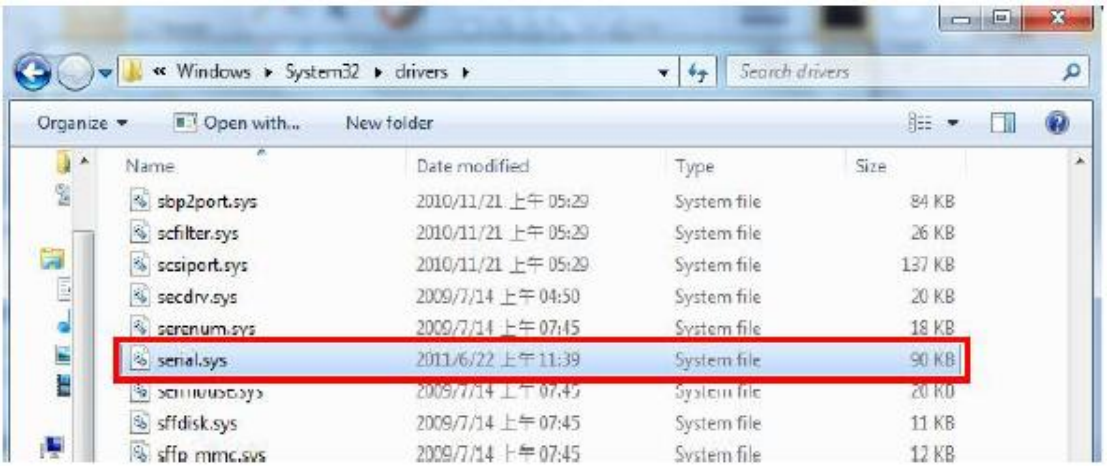
User Account

Control (UAC) in Windows 7")

STEP 2.Extract the Patch_0408.zip to a folder.
STEP 3.Double-click batch file(patch.bat) will install driver.
STEP 4.Check driver install success.
Before the update or update fail.

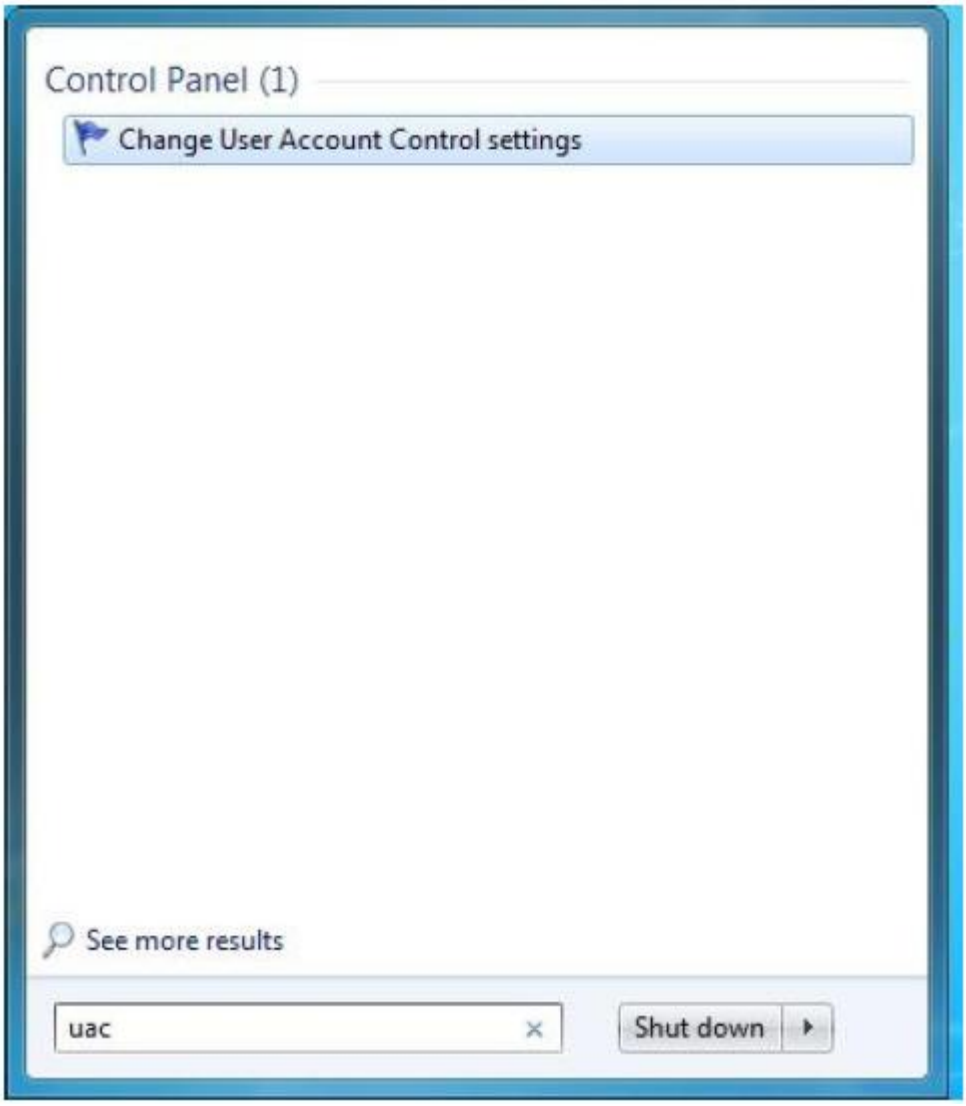

Windows ▸ System32 ▸ drivers ▸
Search drivers
Organize
Open with...
New folder
Name
Date modified
Type
Size
sbp2port.sys 2010/11/21 上午 05:29 System file 84 KB
scfilter.sys 2010/11/21 上午 05:29 System file 26 KB
scsiport.sys 2010/11/21 上午 05:29 System file 137 KB
secdrv.sys 2009/7/14 上午 04:50 System file 20 KB
serenum.sys 2009/7/14 上午 07:45 System file 18 KB
serial.sys 2009/7/14 上午 07:45 System file 82 KB
sermouse.sys 2009/7/14 上午 07:45 System file 20 KB
sffdisk.sys 2009/7/14 上午 07:45 System file 11 KB
sffp_mmc.sys 2009/7/14 上午 07:45 System file 12 KB
sffp_sd.sys 2010/11/21 上午 05:29 System file 13 KB

After the update and update success.

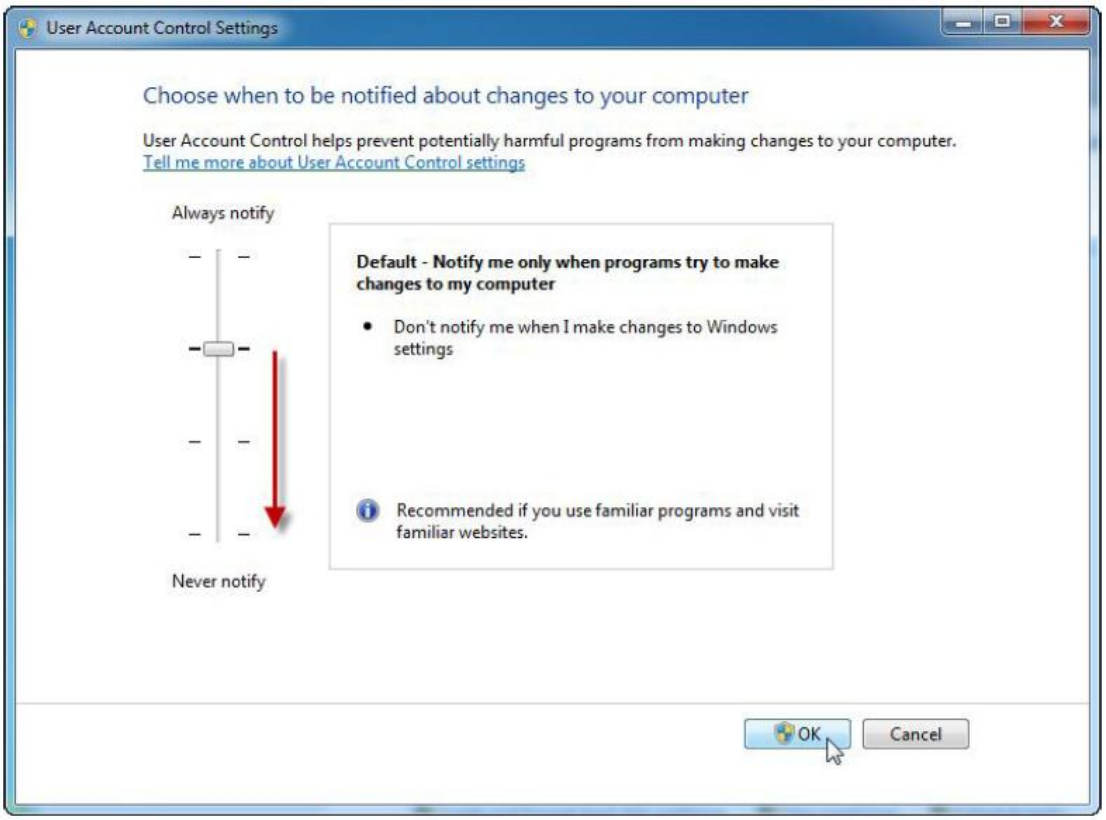

Windows ▸ System32 ▸ drivers ▸
Search drivers
Organize
Open with...
New folder
Name
Date modified
Type
Size
sbp2port.sys 2010/11/21 上午 05:29 System file 84 KB
scfilter.sys 2010/11/21 上午 05:29 System file 26 KB
scsiport.sys 2010/11/21 上午 05:29 System file 137 KB
secdrv.sys 2009/7/14 上午 04:50 System file 20 KB
serenum.sys 2009/7/14 上午 07:45 System file 18 KB
serial.sys 2011/6/22 上午 11:39 System file 90 KB
sffdisk.sys 2009/7/14 上午 07:45 System file 11 KB
sffp_mmc.sys 2009/7/14 上午 07:45 System file 12 KB

STEP 5.You will need to restart your computer for driver install success.
Type in this command from the Run menu:
C:\Windows\System32\UserAccountControlSettings.exe
or

uac



To turn off UAC, move the slider to the Never notify position, and then click OK. If you're prompted
for an administrator password or confirmation, type the password or provide confirmation.


User Account Control Settings
Choose when to be notified about changes to your computer
User Account Control helps prevent potentially harmful programs from making changes to your computer.
Tell me more about User Account Control settings
Always notify
Never notify
Default - Notify me only when programs try to make changes to my computer
Don't notify me when I make changes to Windows settings
Recommended if you use familiar programs and visit familiar websites.
OK
Cancel

To turn UAC back on, move the slider to choose when you want to be notified, and then click OK. If
you're prompted for an administrator password or confirmation, type the password or provide
confirmation.
You will need to restart your computer for UAC to be turned off.

CHAPTER 8

AMI BIOS Installation

This chapter describes the different settings available in the AMI BIOS that comes with the board. This chapter offers information on the Award BIOS installation utility. Sections include:

- BIOS Setup
- Advanced BIOS Features
- Advanced Chipset Features
- Integrated Peripherals
- Power Management Setup
- PC Health Status
- Load Fail-Safe Defaults
- Load Optimized Defaults
- Set Supervisor/User Password
- Save & Exit Setup
- Exit Without Saving

Chapter 8 AMI BIOS SETUP

8.1 Starting Setup

Your computer comes with a hardware configuration program called BIOS Setup that allows you to view and set system parameters.

The BIOS (Basic Input / Output System) is a layer of software, called 'firmware', that translates instructions from software (such as the operating system) into instructions that the computer hardware can understand. The BIOS settings also identify installed devices and establish special features.

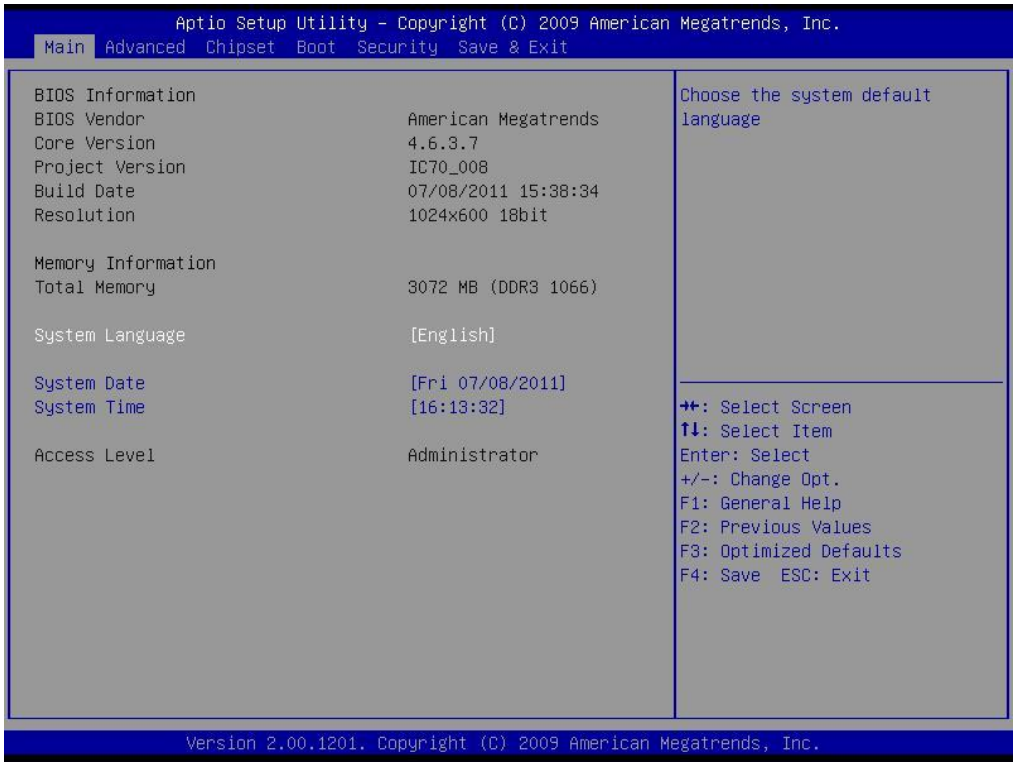
➢ **ENTERING BIOS SETUP**

You can access the BIOS program just after you turn on your computer. Just press the DEL key when the following prompt appears:

Press <DEL> to enter Setup.

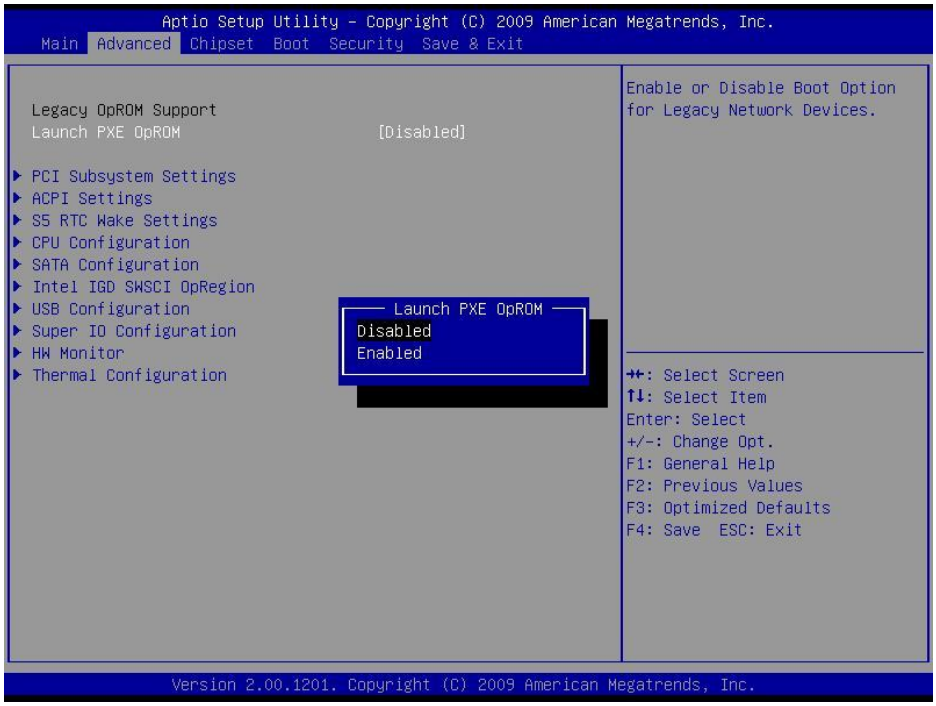
When you press <DEL> to enter BIOS Setup, the system interrupts the Power-On Self-Test (POST).

When you first enter the BIOS Setup Utility, you will enter the Main setup screen. You can always return to the Main setup screen by selecting the Main tab. There are two Main Setup options. They are described in this section. The Main BIOS Setup screen is shown below.


Aptio Setup Utility – Copyright (C) 2009 American Megatrends, Inc.
Main Advanced Chipset Boot Security Save & Exit
BIOS Information
BIOS Vendor American Megatrends
Core Version 4.6.3.7
Project Version IC70_008
Build Date 07/08/2011 15:38:34
Resolution 1024x600 18bit
Memory Information
Total Memory 3072 MB (DDR3 1066)
System Language [English]
System Date [Fri 07/08/2011]
System Time [16:13:32]
Access Level Administrator
Choose the system default language
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save ESC: Exit
Version 2.00.1201. Copyright (C) 2009 American Megatrends, Inc.

The Main BIOS setup screen has two main frames. The left frame displays all the options that can be configured. Grayed-out options cannot be configured; options in blue can be. The right frame displays the key leg- end.
Above the key legend is an area reserved for a text message. When an option is selected in the left frame, it is highlighted in white. Often a text message will accompany it.

8.2 Advanced Setting



➢ Legacy OpROM

SETTING	DESCRIPTION
Disabled	Use this setting to ignore all PXE Option ROMs.
Enabled	Use this setting to load PXE Option ROMs. To limit the PXE support to particular devices, use the function Use device for PXE.

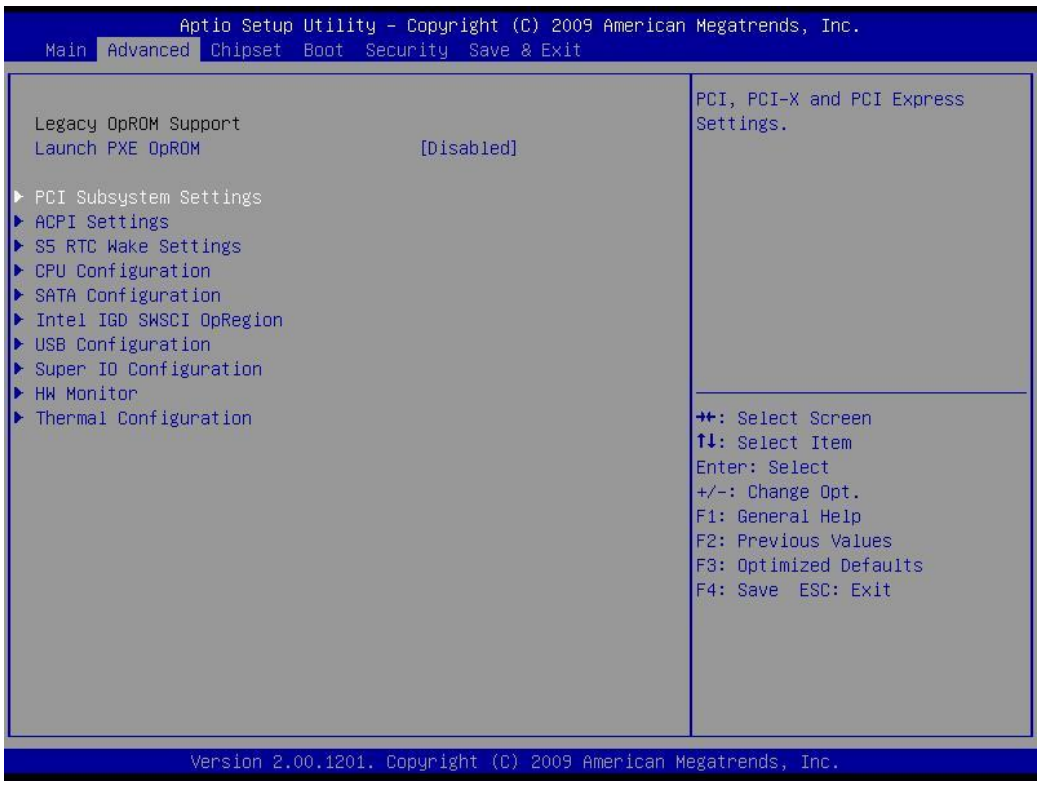
Default: Disabled

➢ Launch Storage OpROM

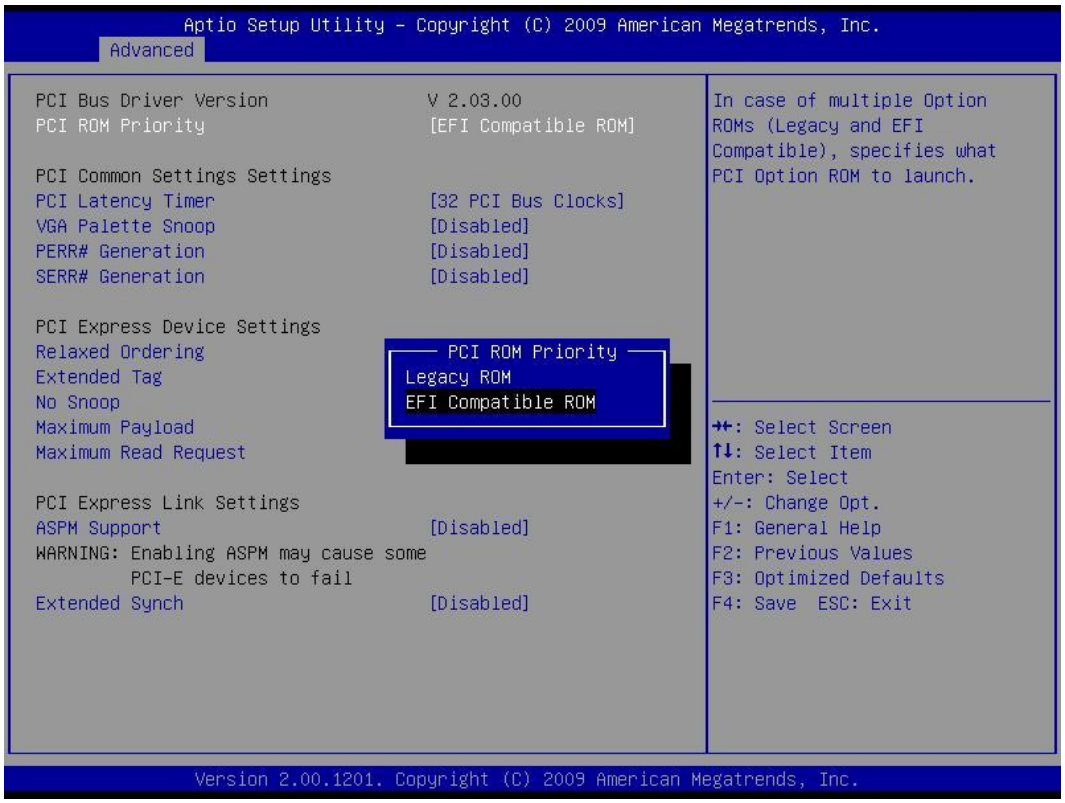
SETTING	DESCRIPTION
Disabled	Use this setting to ignore all PXE Option ROMs.
Enabled	Use this setting to specify that legacy PCI option ROMs for PCI storage devices are to be loaded and executed, if found. Typical examples of PCI storage devices include SCSI or similar devices.

Default: Enabled

➢ PCI Subsystem Settings



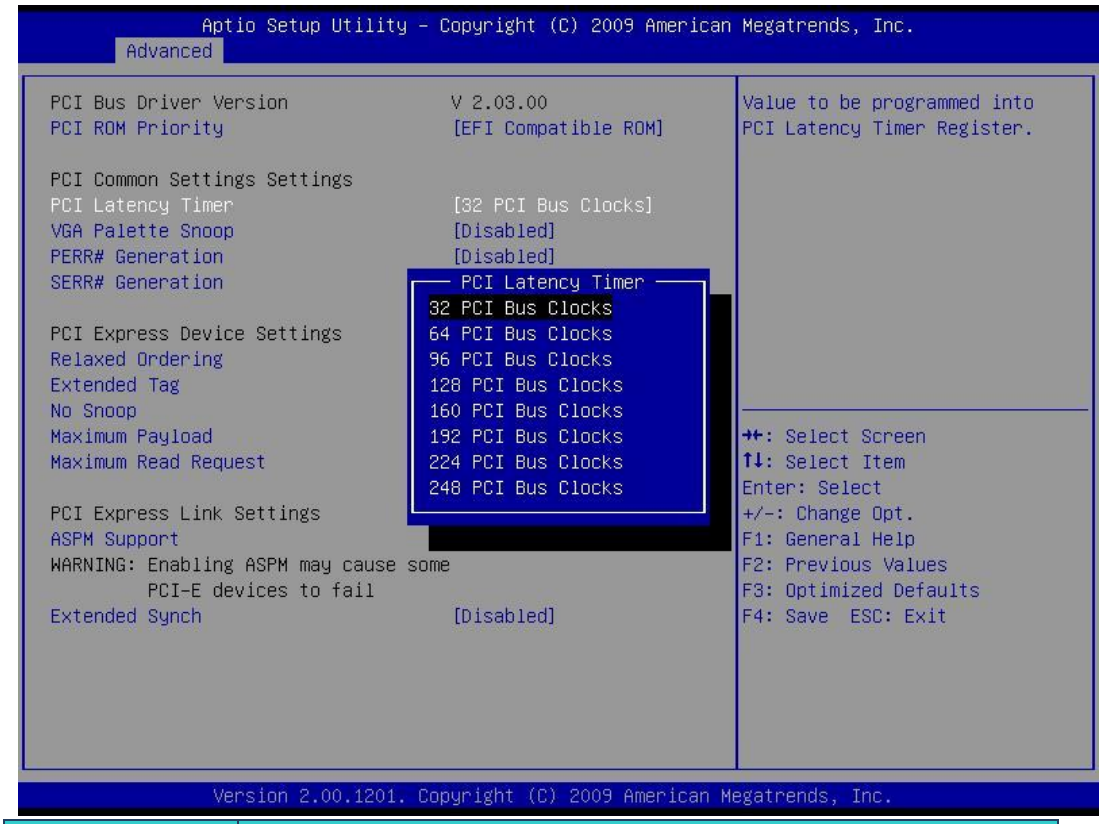
PCI ROM Priority


Aptio Setup Utility – Copyright (C) 2009 American Megatrends, Inc.
Advanced
PCI Bus Driver Version V 2.03.00
PCI ROM Priority [EFI Compatible ROM]
PCI Common Settings Settings
PCI Latency Timer [32 PCI Bus Clocks]
VGA Palette Snoop [Disabled]
PERR# Generation [Disabled]
SERR# Generation [Disabled]
PCI Express Device Settings
Relaxed Ordering
Extended Tag
No Snoop
Maximum Payload
Maximum Read Request
PCI ROM Priority
Legacy ROM
EFI Compatible ROM
PCI Express Link Settings
ASPM Support [Disabled]
WARNING: Enabling ASPM may cause some
PCI-E devices to fail
Extended Synch [Disabled]
In case of multiple Option ROMs (Legacy and EFI Compatible), specifies what PCI Option ROM to launch.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save ESC: Exit
Version 2.00.1201. Copyright (C) 2009 American Megatrends, Inc.

Selects the PCI Option ROM to launch in case Multiple Option ROMs (**Legacy ROM** and **EFI Compatible ROM**) are present.

PCI Latency Timer

Use this function to select the number of PCI bus clocks to be used for the PCI latency timer.

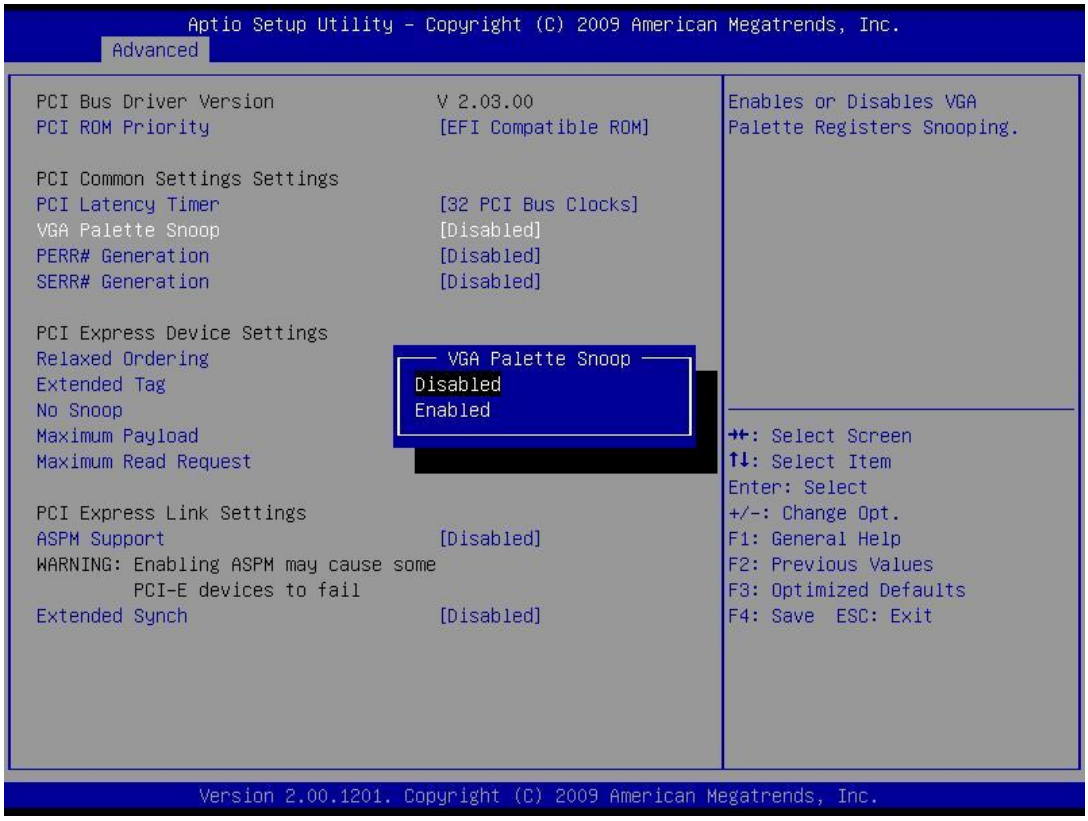


SETTING	DESCRIPTION
32 PCI Bus Clocks	Use this setting to program the PCI latency timer to 32 PCI bus clocks.
64 PCI Bus Clocks	Use this setting to program the PCI latency timer to 64 PCI bus clocks.
96 PCI Bus Clocks	Use this setting to program the PCI latency timer to 96 PCI bus clocks.
128 PCI Bus Clocks	Use this setting to program the PCI latency timer to 128 PCI bus clocks.
160 PCI Bus Clocks	Use this setting to program the PCI latency timer to 160 PCI bus clocks.
192 PCI Bus Clocks	Use this setting to program the PCI latency timer to 192 PCI bus clocks.
224 PCI Bus Clocks	Use this setting to program the PCI latency timer to 224 PCI bus clocks.
248 PCI Bus Clocks	Use this setting to program the PCI latency timer to 248 PCI bus clocks.

Default: 32 PCI Bus Clocks

VGA Palette Snoop

VGA Palette Snoop: This filed controls the ability of a primary PCI VGA controller to share a common palette (when a snoop write cycles) with an ISA video card.



Enables or Disables VGA Palette Registers Snooping.

PERR# Generation

Enables or Disables PCI Device to Generate PERR#.

SERR# Generation

Enables or Disables PCI Device to Generate SERR#.

Relaxed Ordering

Enables or Disables PCI Express Device Relaxed Ordering.

Extended Tag

If ENABLED allows Device to use 8-bit Tag field as a requester.

No Snoop

Enables or Disables PCI Express Device No Snoop option.

Maximum Payload

Set Maximum Payload of PCI Express Device or allow System BIOS to select the value.

Maximum Read Request

Launches (Enabled/Disabled) the boot option for legacy network devices.

ASPM Support

Set the ASPM Level:

Force L0 – Force all links to L0 State

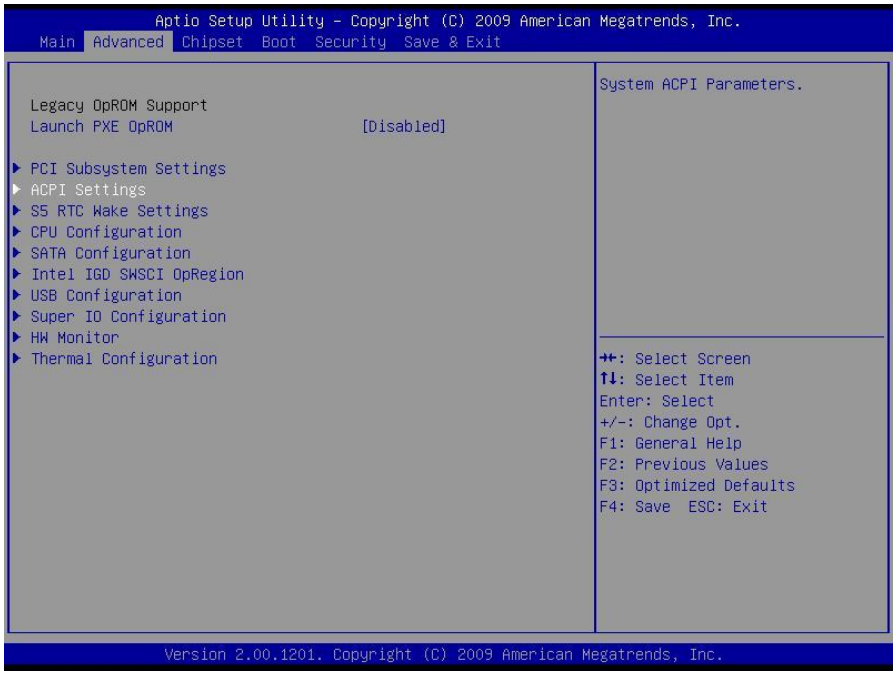
AUTO – BIOS auto configure

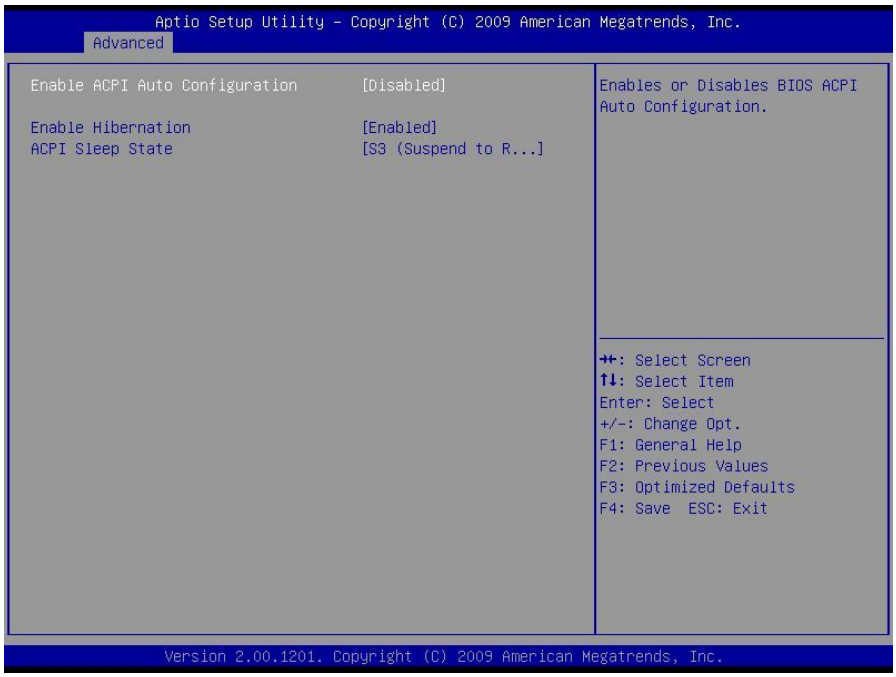
DISABLE – Disables ASPM

Extended Synch

If ENABLED allows generation of Extended Synchronization patterns.

➢ ACPI Settings




Aptio Setup Utility – Copyright (C) 2009 American Megatrends, Inc.
Advanced
Enable ACPI Auto Configuration [Disabled]
Enable Hibernation [Enabled]
ACPI Sleep State [S3 (Suspend to R...]
Enables or Disables BIOS ACPI Auto Configuration.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save ESC: Exit
Version 2.00.1201. Copyright (C) 2009 American Megatrends, Inc.

Enabled ACPI Auto Configuration

Enables or Disables BIOS ACPI Auto Configuration.

Enable Hibernation

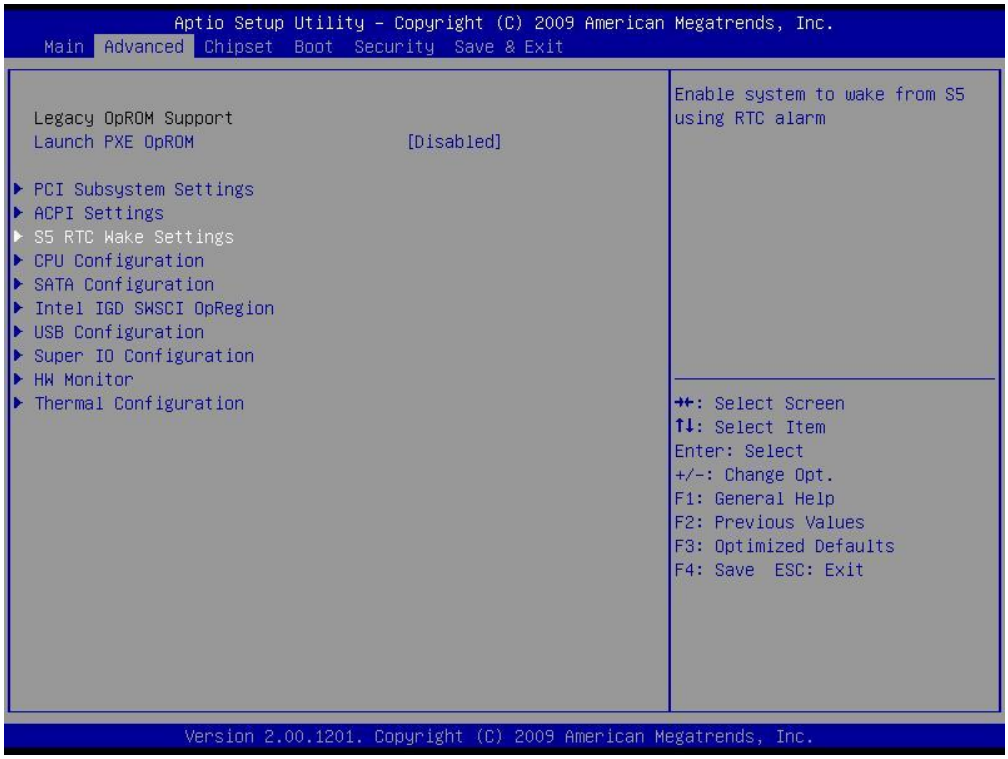
Enables or Disables System ability to Hibernate (OS/S4 Sleep State). This option may be not effective with some OS.

ACPI Sleep State

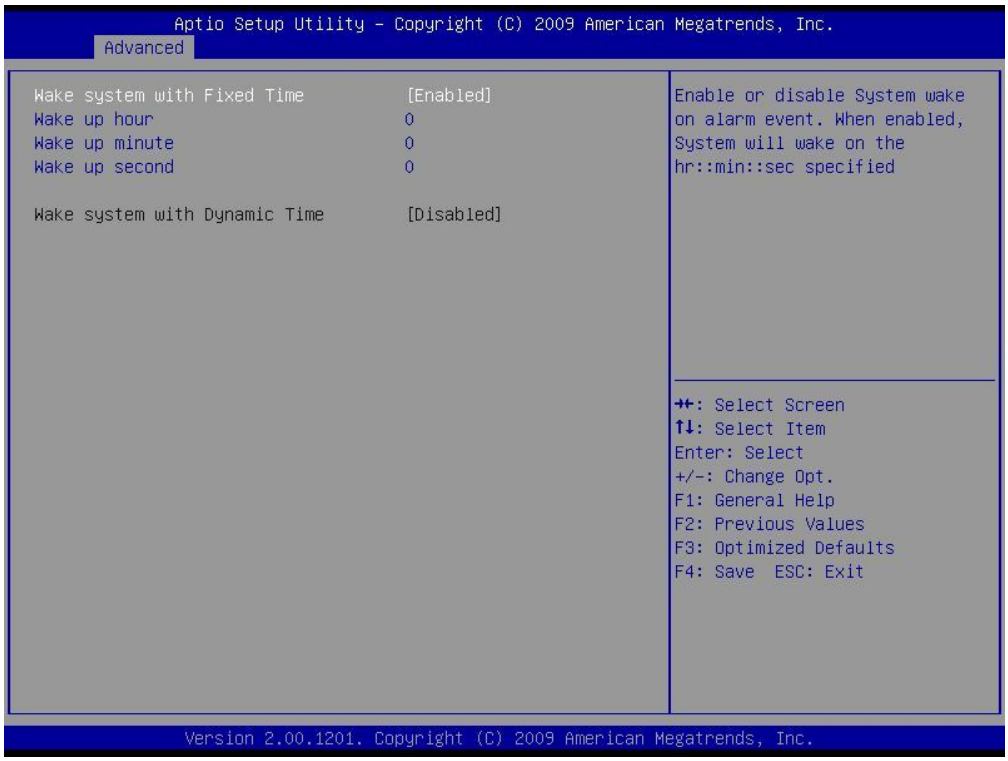
Select the highest ACPI sleep state the system will enter, when the SUSPEND button is pressed.

➢ S5 RTC Wake Settings

This function defines the RTC wake-up settings to allow the system to wake up from the S5 (soft off) state.



This screen provides functions for specifying the S5 RTC Wake Settings.


Aptio Setup Utility – Copyright (C) 2009 American Megatrends, Inc.
Advanced
Wake system with Fixed Time [Enabled]
Wake up hour 0
Wake up minute 0
Wake up second 0
Wake system with Dynamic Time [Disabled]
Enable or disable System wake on alarm event. When enabled, System will wake on the hr::min::sec specified
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save ESC: Exit
Version 2.00.1201. Copyright (C) 2009 American Megatrends, Inc.

Wake System with Fixed Time

This function allows the system to wake up from S5 state at a specified time.

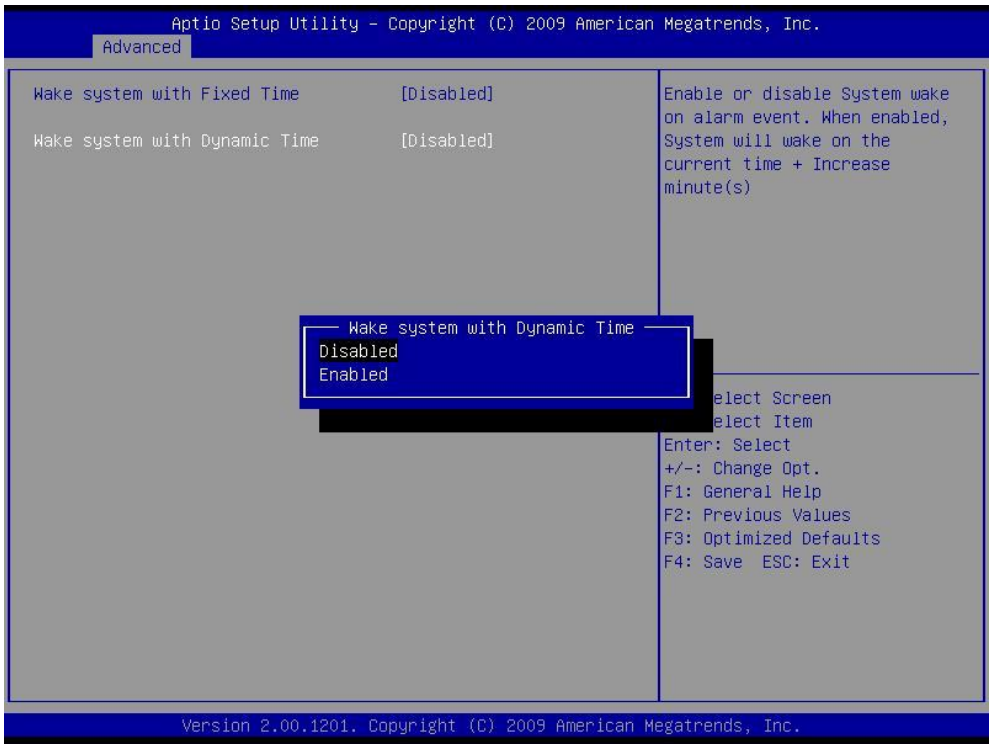
Wake-Up Hour, Wake-Up Minute, Wake-Up Second

This function is used to specify the hour (0-23), the minute (0-59) and the second (0-59) when the system is to wake up from S5 state.

Note: This function is available only when the function “Wake System with Fixed Time” is set to Enabled.

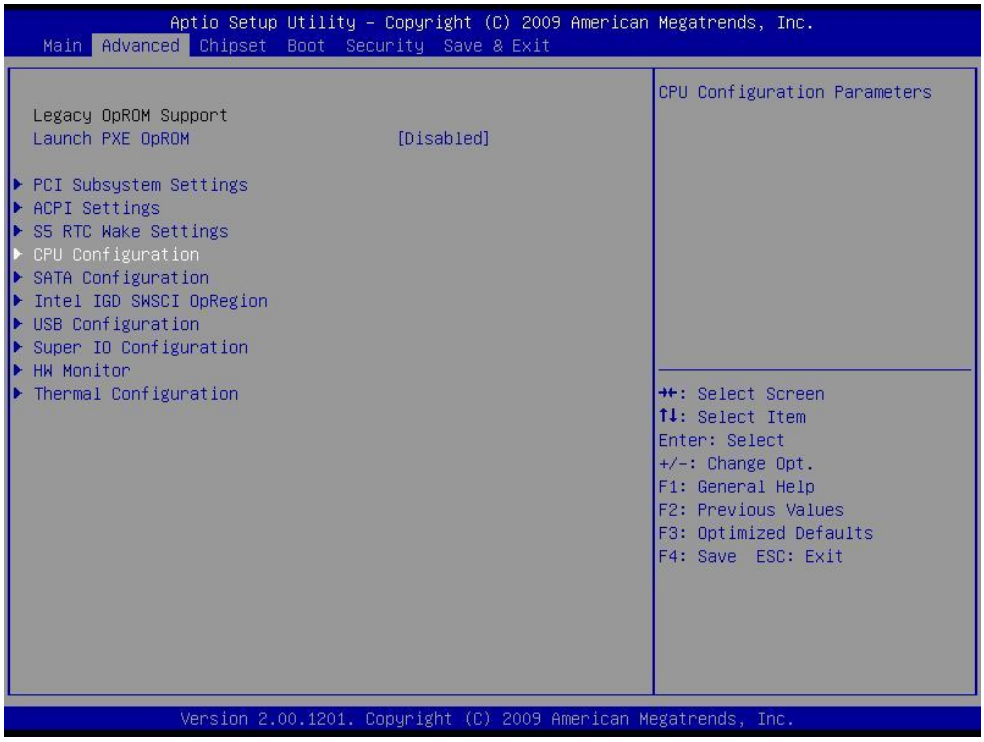
Wake System with Dynamic Time

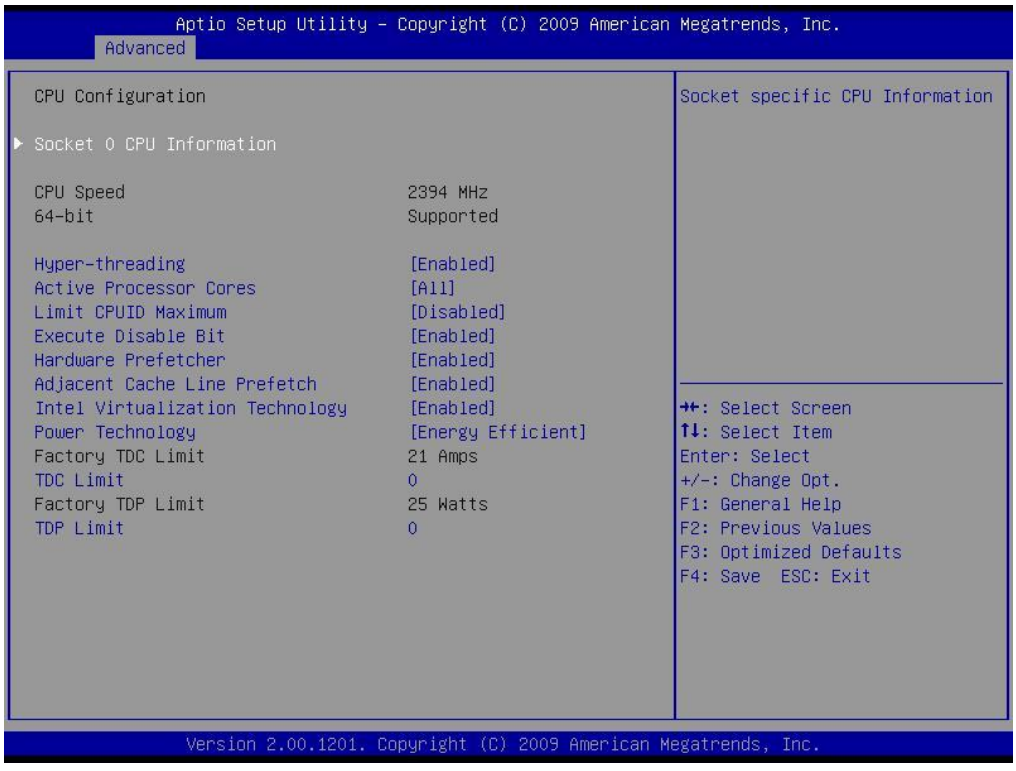
This function is intended for debugging purposes only.


Aptio Setup Utility – Copyright (C) 2009 American Megatrends, Inc.
Advanced
Wake system with Fixed Time [Disabled]
Wake system with Dynamic Time [Disabled]
Enable or disable System wake on alarm event. When enabled, System will wake on the current time + Increase minute(s)
Wake system with Dynamic Time
Disabled
Enabled
elect Screen
elect Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save ESC: Exit
Version 2.00.1201. Copyright (C) 2009 American Megatrends, Inc.

CPU Configuration

This section shows the CPU configuration parameters.





Hyper-threading

Enabled for Windows XP and Linux (OS optimized for Hyper-Threading Technology) and Disabled for other OS (OS not optimized for Hyper-Threading Technology). When Disabled, only one thread per enabled core is enabled.

Active Processor Cores

This field is used to enter the number of cores to enable in each processor package.

Limit CPUID Maximum

Disabled for Windows XP.

Execute Disable Bit

XD can prevent certain classes of malicious buffer overflow attacks when combined with a supporting OS

(Windows Server 2003 SP1, Windows XP SP2, SuSE Linux 9.2, RedHat Enterprise 3 Update 3.)

Hardware Prefetcher

Turns on/off the MLC streamer prefetcher.

Adjacent Cache Line Prefetch

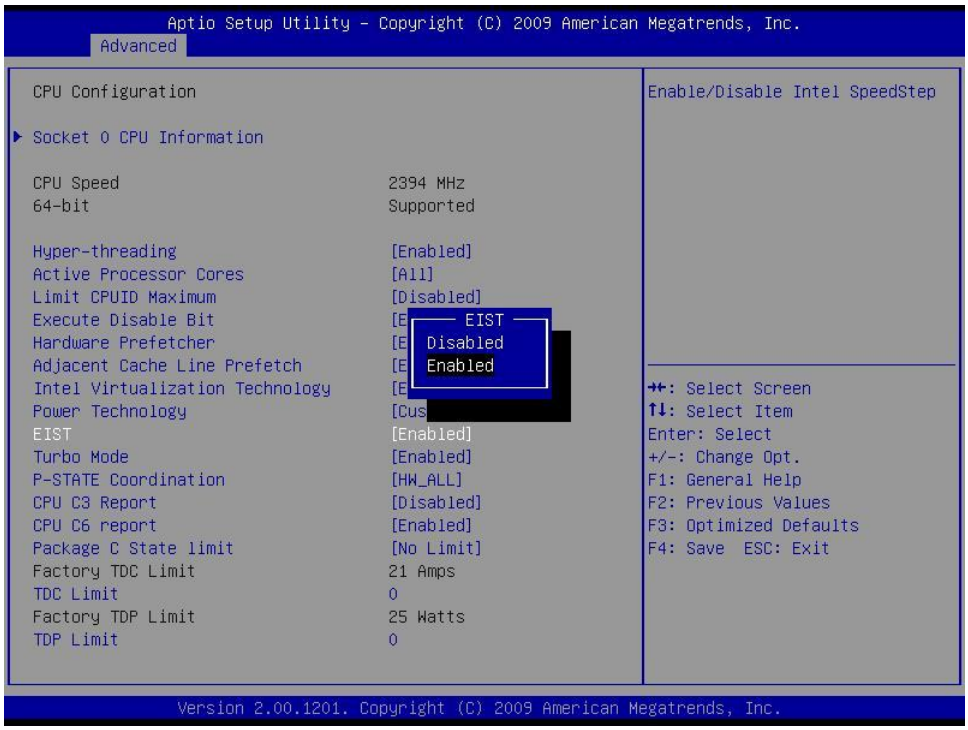
To turn on/off prefetching of adjacent cache lines.

Intel Virtualization Technology

When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology.

Power Technology

Enable the power management features.

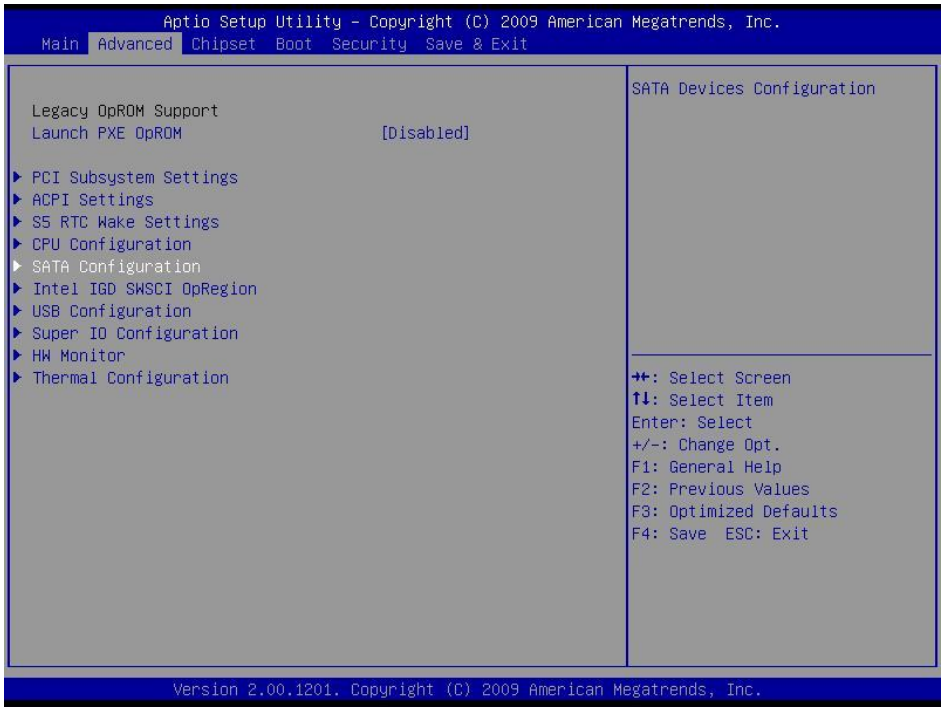


TDC Limit / TDP Limit

Turbo-XE Mode Processor TDC Limit in 1/8 A granularity. 0 means using the factory-configured value.

SATA Configuration

SATA Devices Configuration.

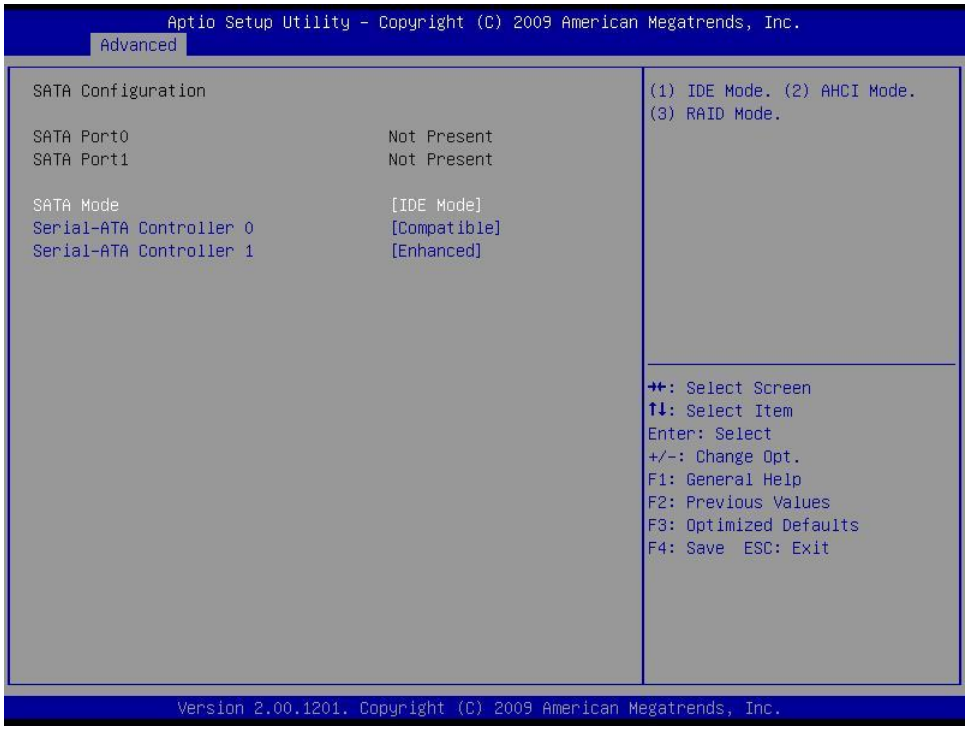


SATA Mode

(1) IDE Mode. (2) AHCI Mode. (3) RAID Mode.

IDE Mode：This option configures the Serial ATA drives as Parallel ATA storage devices.

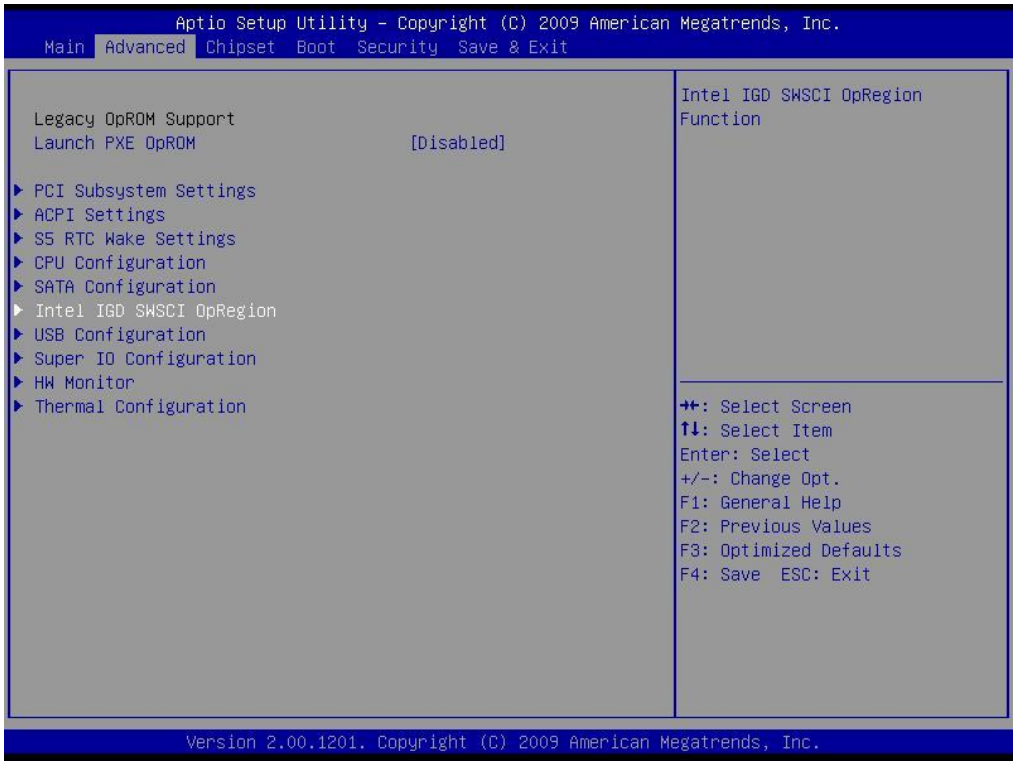
AHCI Mode：This option allows the Serial ATA devices to use AHCI (Advanced Host ControllerInterface).

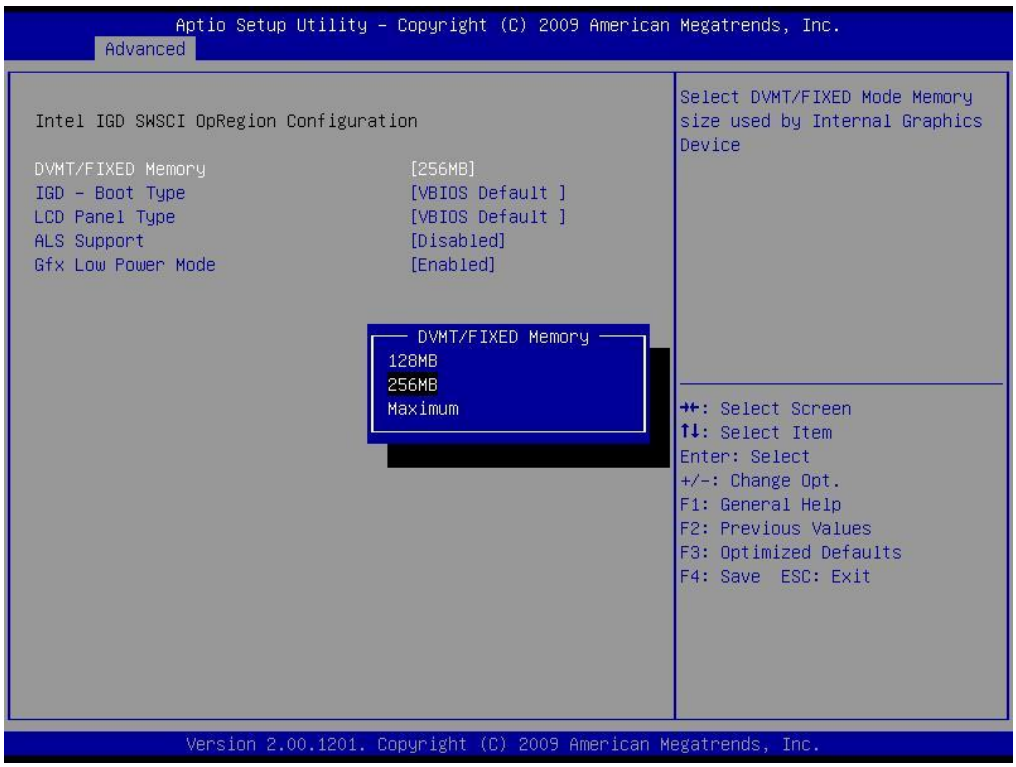


Serial-ATA Controller

Enable / Disable Serial ATA Controller.

Intel IGD SWSCI OpRegion




Aptio Setup Utility – Copyright (C) 2009 American Megatrends, Inc.
Advanced
Intel IGD SWSCI OpRegion Configuration
DVMT/FIXED Memory [256MB]
IGD – Boot Type [VBIOS Default]
LCD Panel Type [VBIOS Default]
ALS Support [Disabled]
Gfx Low Power Mode [Enabled]
DVMT/FIXED Memory
128MB
256MB
Maximum
Select DVMT/FIXED Mode Memory size used by Internal Graphics Device
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save ESC: Exit
Version 2.00.1201. Copyright (C) 2009 American Megatrends, Inc.

DVMT/FIXED Memory

Select DVMT/FIXED Mode Memory size used by Internal Graphics Device. Options are 128MB, 256MB and Maximum.

IGD – Boot Type

Select the Video Device which will be activated during POST. This has no effect if external graphics present. Options are VBIOS Default, CRT, LFP, CRT+LFP, EFP and CRT+EFP.

LCD Panel Type

Selects the LCD panel used by the internal graphics device.

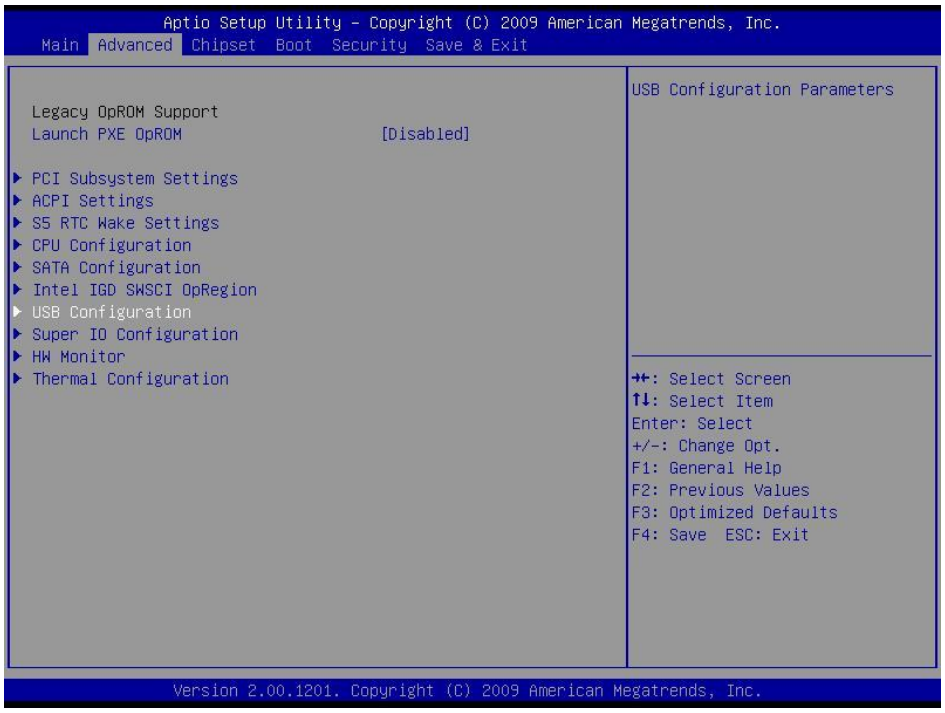
ALS Support

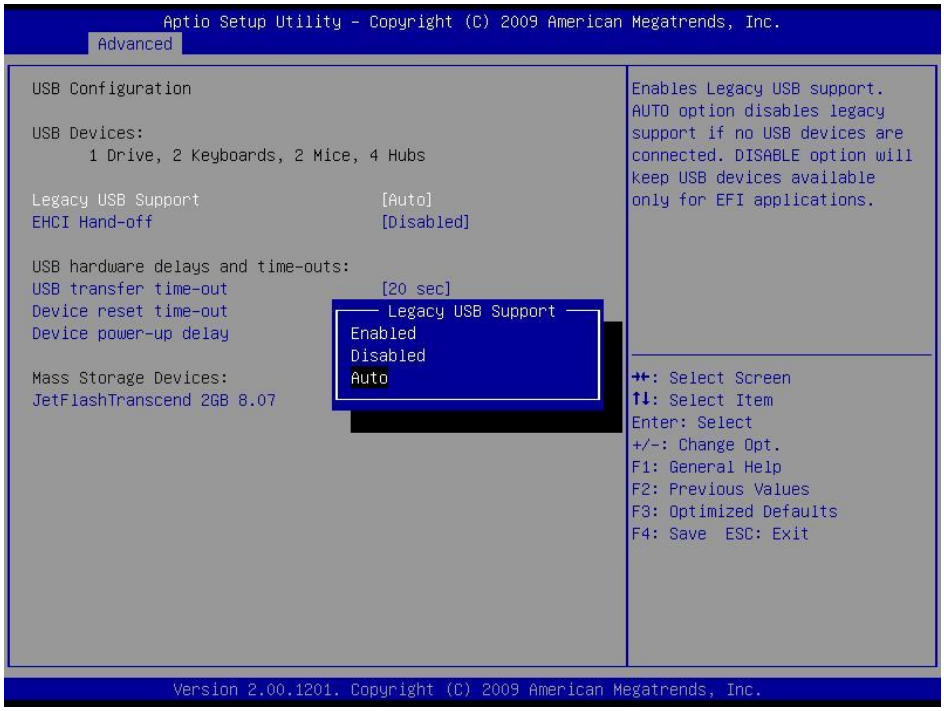
Enabled or Disabled. Valid only for ACPI. Legacy = ALS Support through the IGD INT10 function. ACPI = ALS support through an ACPI ALS driver.

Gfx Low Power Mode

Enabled or Disabled. This option is applicable for SFF only.

USB Configuration




Aptio Setup Utility – Copyright (C) 2009 American Megatrends, Inc.
Advanced
USB Configuration
USB Devices:
1 Drive, 2 Keyboards, 2 Mice, 4 Hubs
Legacy USB Support [Auto]
EHCI Hand-off [Disabled]
USB hardware delays and time-outs:
USB transfer time-out [20 sec]
Device reset time-out
Device power-up delay
Mass Storage Devices:
JetFlashTranscend 2GB 8.07
Legacy USB Support
Enabled
Disabled
Auto
Enables Legacy USB support. AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save ESC: Exit
Version 2.00.1201. Copyright (C) 2009 American Megatrends, Inc.

Legacy USB Support

Enabled-Enables legacy USB.

Auto-Disables support for legacy when no USB devices are connected.

Disabled-Keeps USB devices available only for EFI applications.

EHCI Hand-off

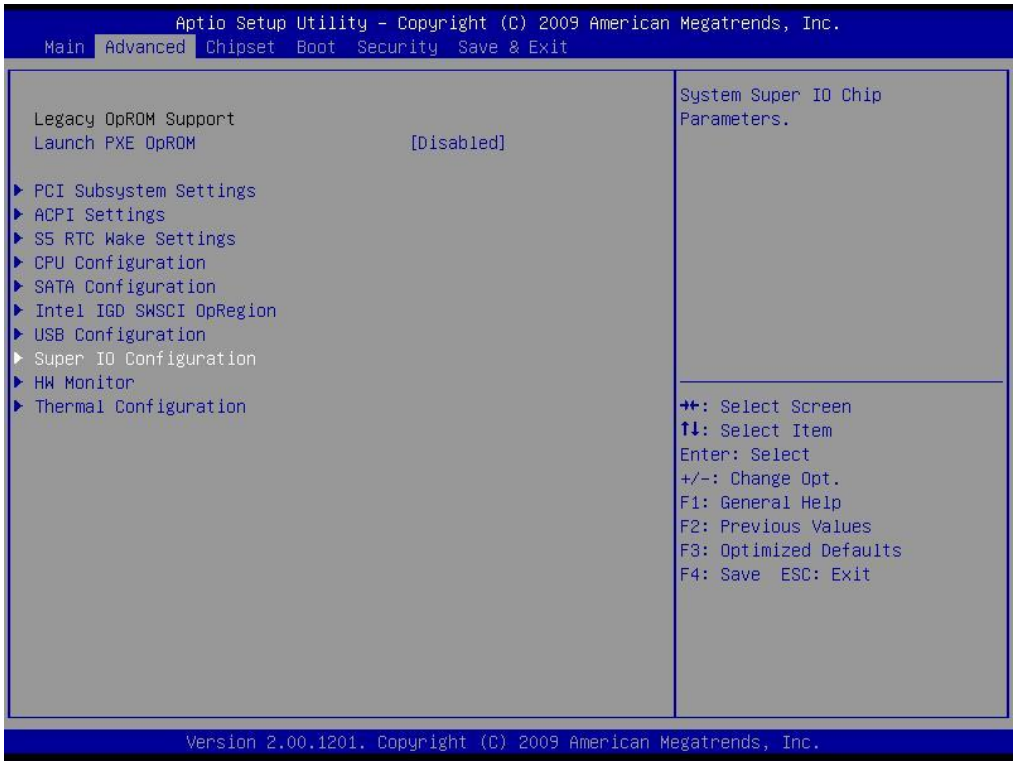
This is a workaround for OSes that does not support EHCI hand-off. The EHCI ownership change should be claimed by the EHCI driver.

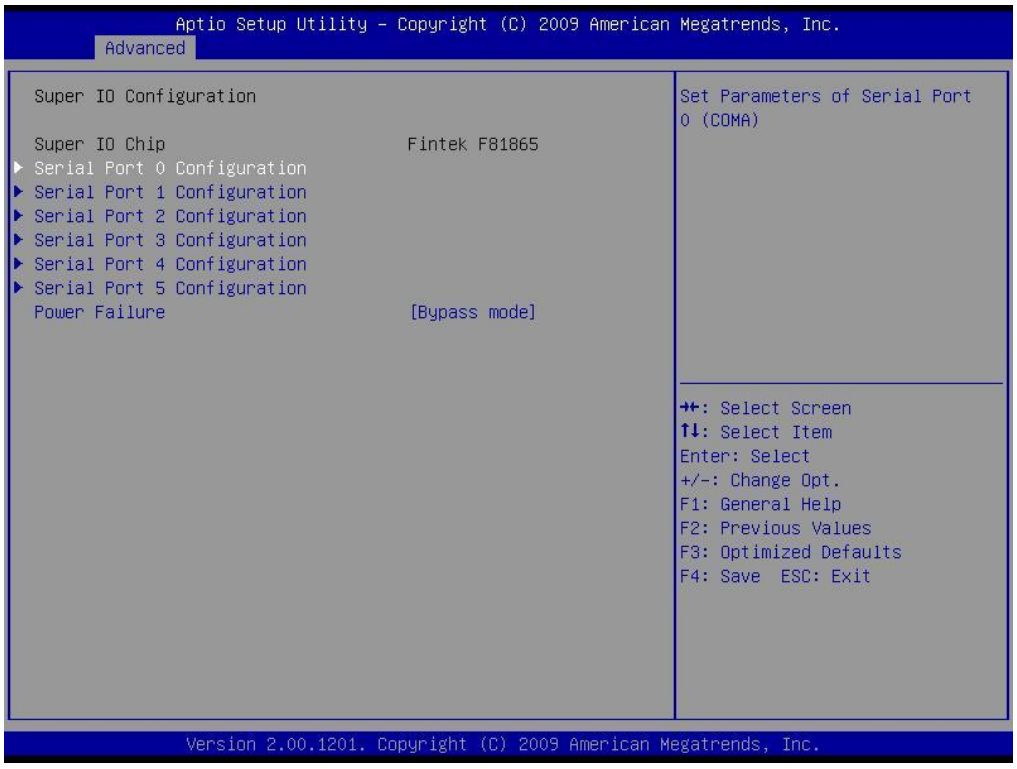
Device Reset Timeout

USB mass storage device Start Unit command timeout.

Options are: 10 sec / 20 sec / 30 sec / 40 sec.

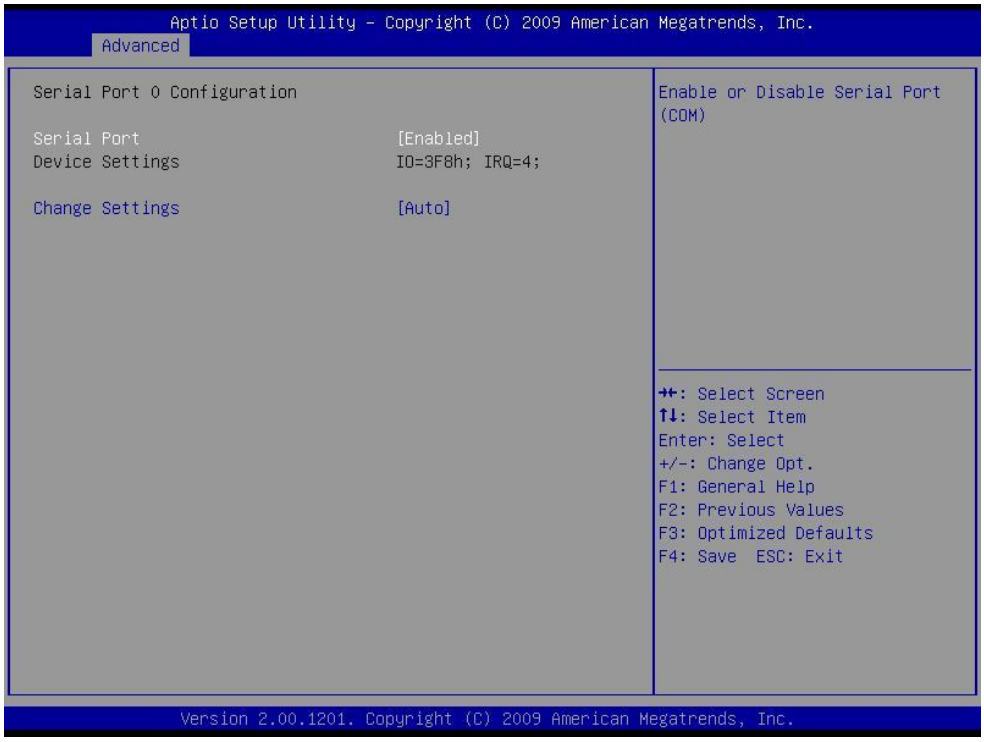
Super IO Configuration




Aptio Setup Utility – Copyright (C) 2009 American Megatrends, Inc.
Advanced
Super IO Configuration
Super IO Chip Fintek F81865
Serial Port 0 Configuration
Serial Port 1 Configuration
Serial Port 2 Configuration
Serial Port 3 Configuration
Serial Port 4 Configuration
Serial Port 5 Configuration
Power Failure [Bypass mode]
Set Parameters of Serial Port 0 (COMA)
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save ESC: Exit
Version 2.00.1201. Copyright (C) 2009 American Megatrends, Inc.

Serial Port Configuration

Set Parameters of Serial Ports. User can Enable/Disable the serial port and Select an optimal settings for the Super IO Device.

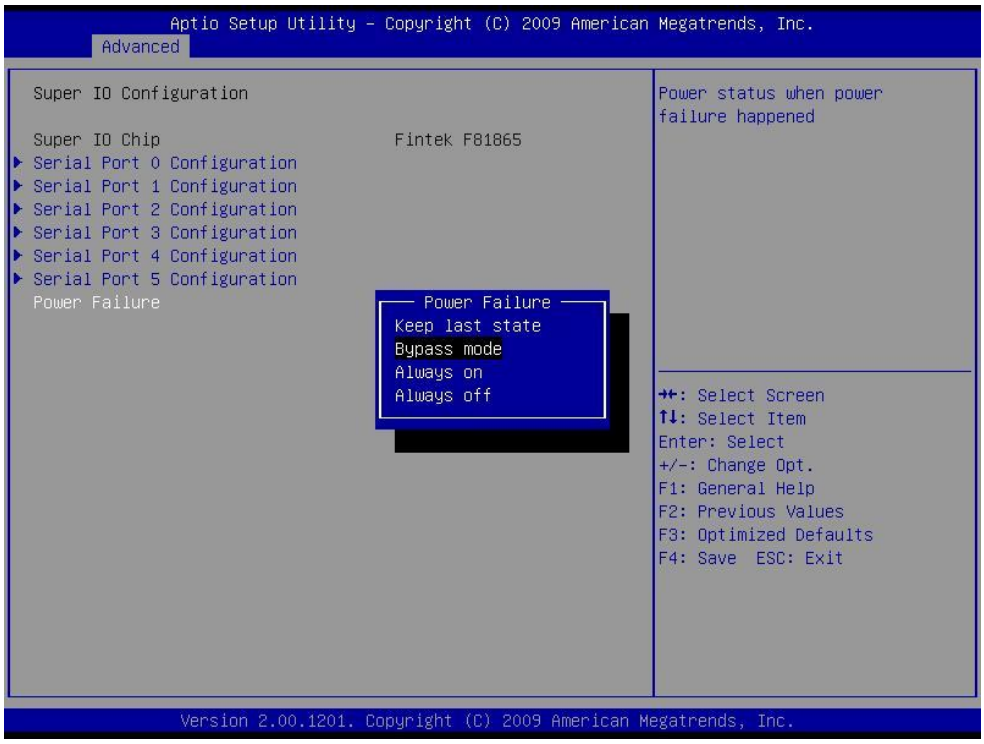


Serial Port

Enables or disables the serial port.

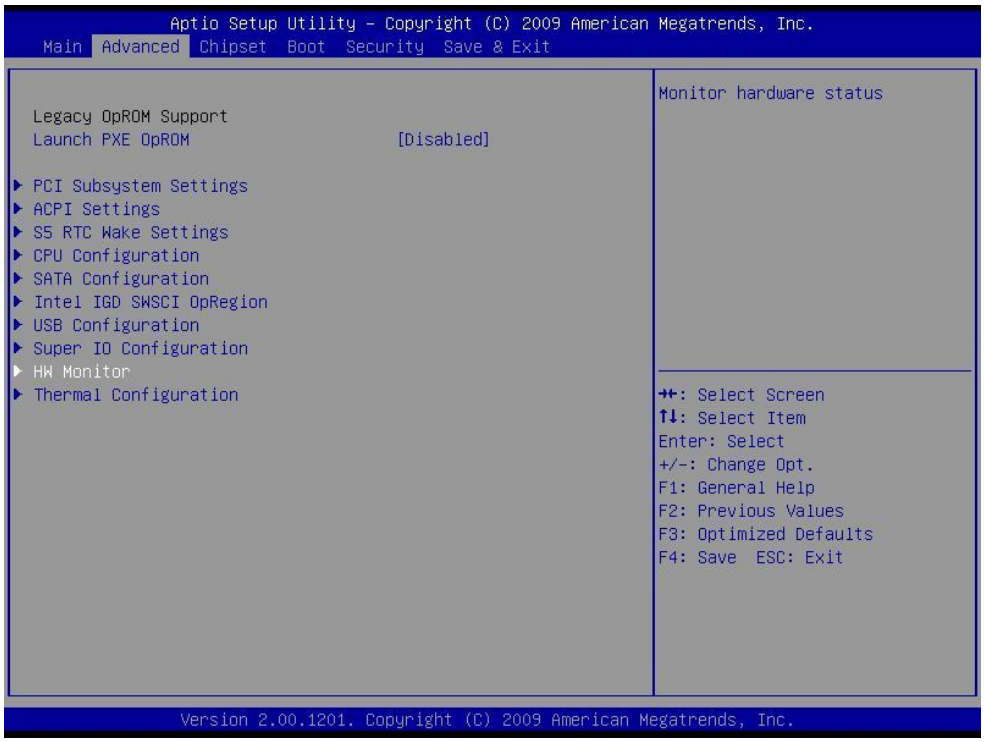
Change Settings

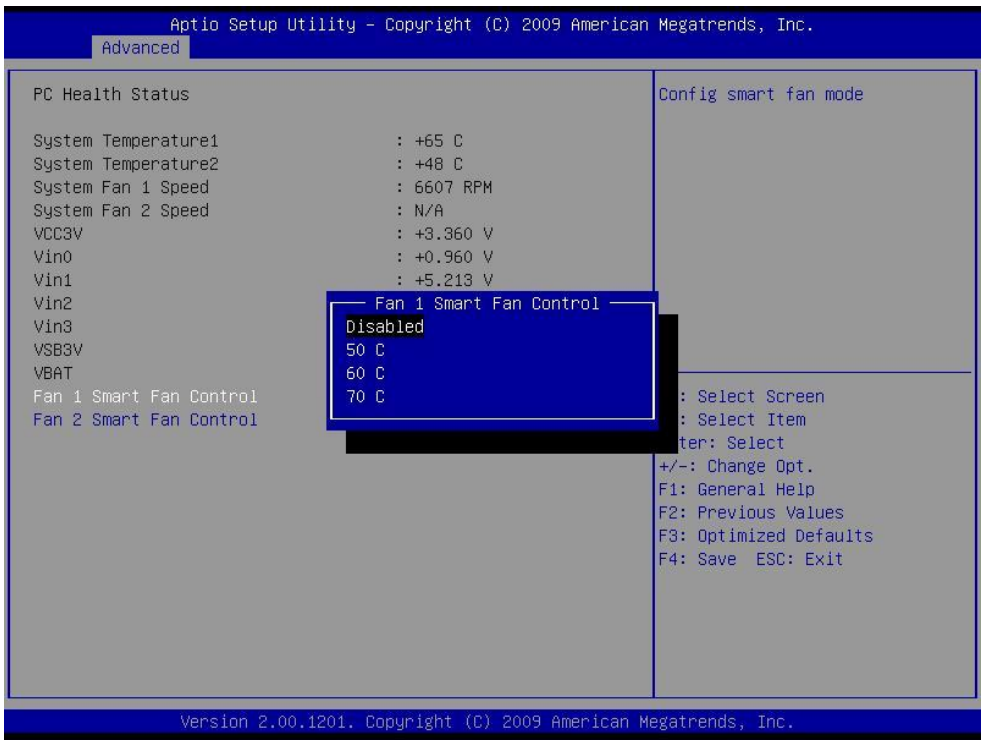
Selects the IO/IRQ setting of the I/O device.



Power Failure Options are: Keep last state 、Bypass mode 、Always on 、Always off (default)

HW Monitor

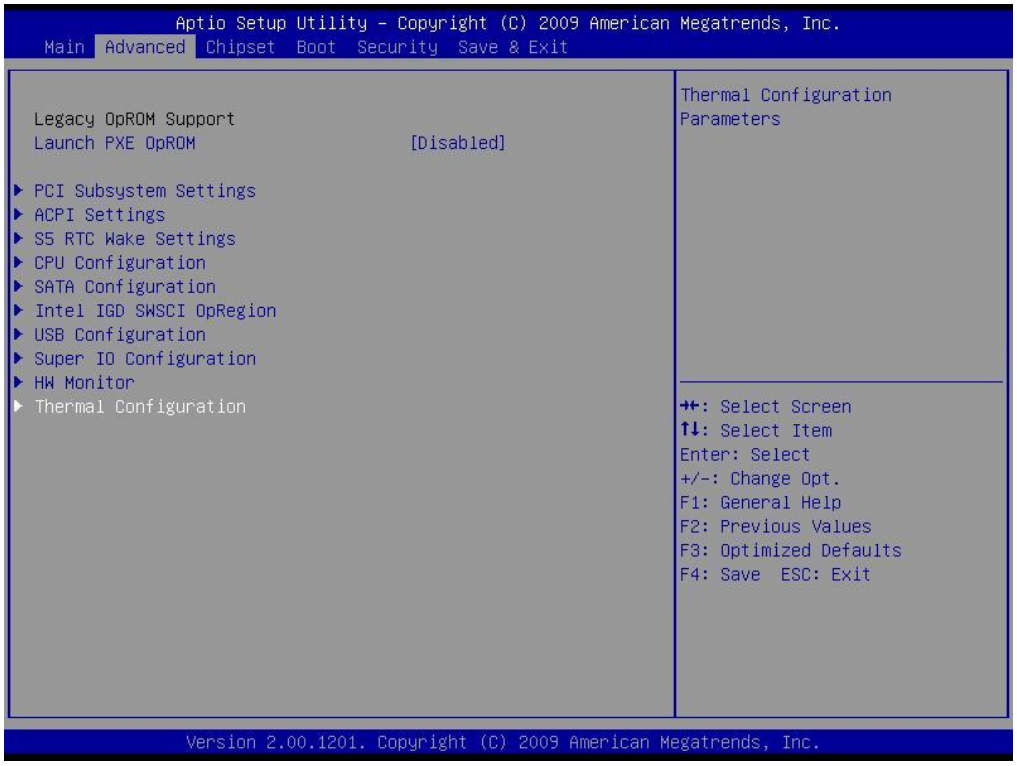


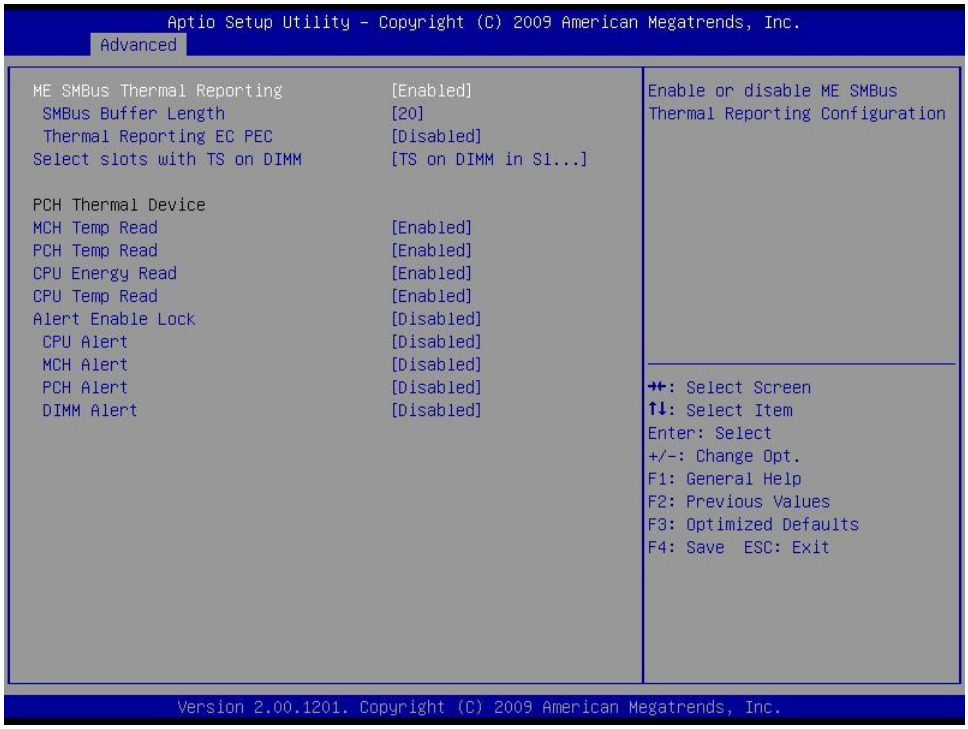


Fan1/Fan2 Smart Fan Control

This field enables or disables the smart fan feature. At a certain temperature, the fan starts turning. Once the temperature drops to a certain level, it stops turning again.

Thermal Configuration




Aptio Setup Utility – Copyright (C) 2009 American Megatrends, Inc.
Advanced
ME SMBus Thermal Reporting [Enabled]
SMBus Buffer Length [20]
Thermal Reporting EC PEC [Disabled]
Select slots with TS on DIMM [TS on DIMM in S1...]
PCH Thermal Device
MCH Temp Read [Enabled]
PCH Temp Read [Enabled]
CPU Energy Read [Enabled]
CPU Temp Read [Enabled]
Alert Enable Lock [Disabled]
CPU Alert [Disabled]
MCH Alert [Disabled]
PCH Alert [Disabled]
DIMM Alert [Disabled]
Enable or disable ME SMBus Thermal Reporting Configuration
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save ESC: Exit
Version 2.00.1201. Copyright (C) 2009 American Megatrends, Inc.

ME SMBus Thermal Reporting

Enable/Disable ME SMBus Thermal Reporting Configuration.

MCH Temp Read

MCH Temperature Read Enable.

PCH Temp Read

PCH Temperature Read Enable.

CPU Energy Read

CPU Energy Read Enable.

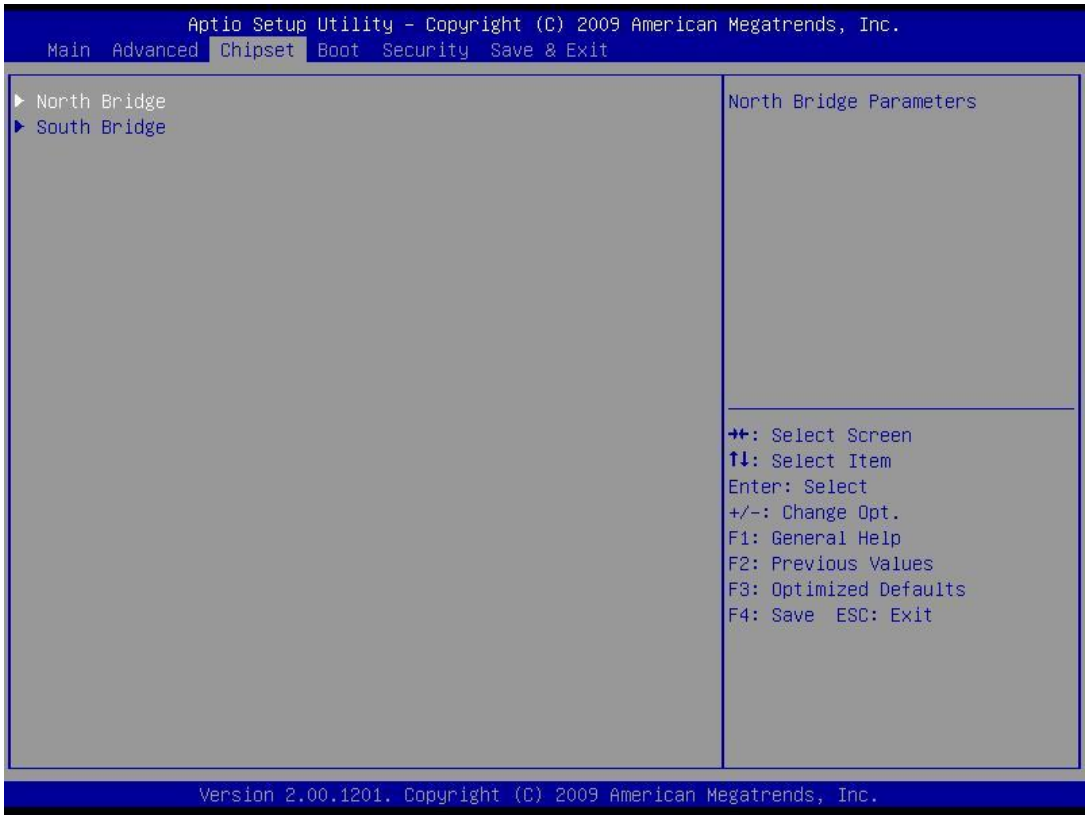
CPU Temp Read

CPU Temperature Read Enable.

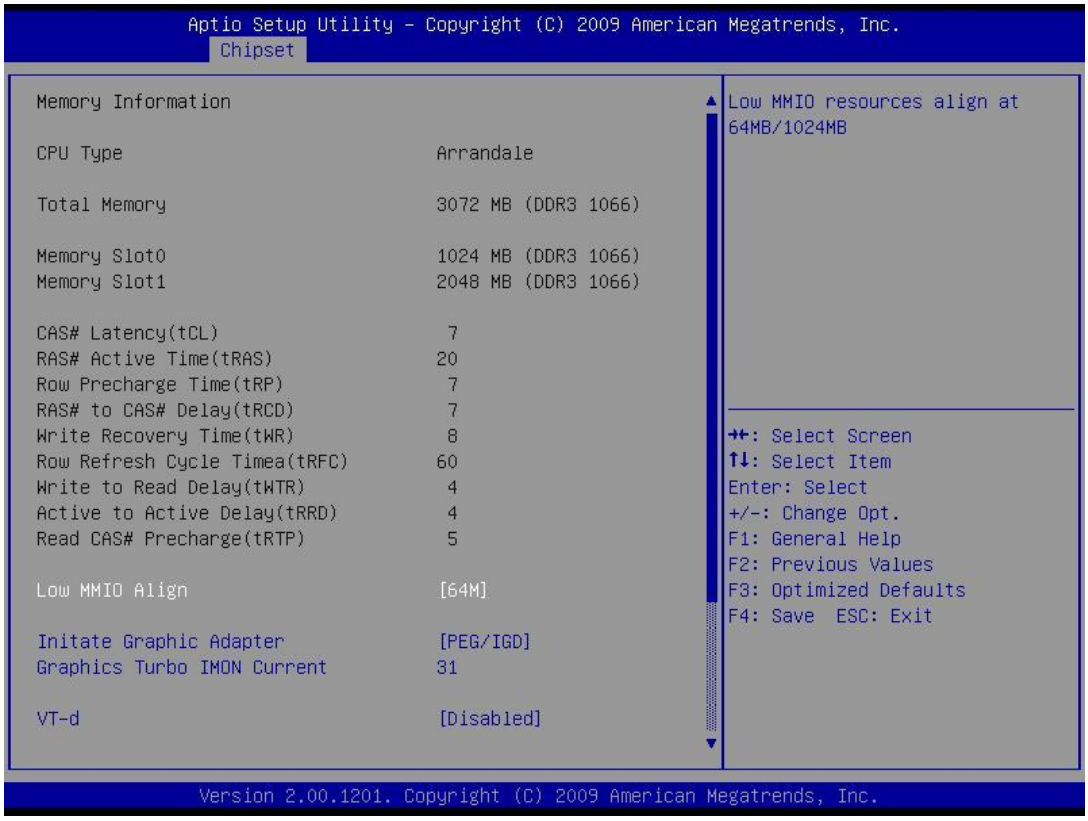
Alert Enable Lock

Lock all Alert Enable settings.

8.3 Chipset Setting


Aptio Setup Utility – Copyright (C) 2009 American Megatrends, Inc.
Main Advanced Chipset Boot Security Save & Exit
North Bridge
South Bridge
North Bridge Parameters
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save ESC: Exit
Version 2.00.1201. Copyright (C) 2009 American Megatrends, Inc.

North Bridge


Aptio Setup Utility – Copyright (C) 2009 American Megatrends, Inc.
Chipset
Memory Information
CPU Type Arrandale
Total Memory 3072 MB (DDR3 1066)
Memory Slot0 1024 MB (DDR3 1066)
Memory Slot1 2048 MB (DDR3 1066)
CAS# Latency(tCL) 7
RAS# Active Time(tRAS) 20
Row Precharge Time(tRP) 7
RAS# to CAS# Delay(tRCD) 7
Write Recovery Time(tWR) 8
Row Refresh Cycle Timea(tRFC) 60
Write to Read Delay(tWTR) 4
Active to Active Delay(tRRD) 4
Read CAS# Precharge(tRTP) 5
Low MMIO Align [64M]
Initate Graphic Adapter [PEG/IGD]
Graphics Turbo IMON Current 31
VT-d [Disabled]
Low MMIO resources align at 64MB/1024MB
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save ESC: Exit
Version 2.00.1201. Copyright (C) 2009 American Megatrends, Inc.

Low MMIO Align

Low MMIO resources align at 64MB/1024MB.

Initiate Graphic Adapter

Select which graphics controller to use as the primary boot device. Options are IGD, PCI/IGD, PCI/PEG, PEG/IGD, PEG/PCI and SG.

Graphics Turbo IMON Current

Graphics turbo IMON current values supported (14-31).

VT-d

VT-d Enable/Disable.

PCI Express Compliance Mode

PCI Express Compliance Mode Enable/Disable.

PCI Express Port

Options are Disabled, Enabled and Auto.

IGD Memory

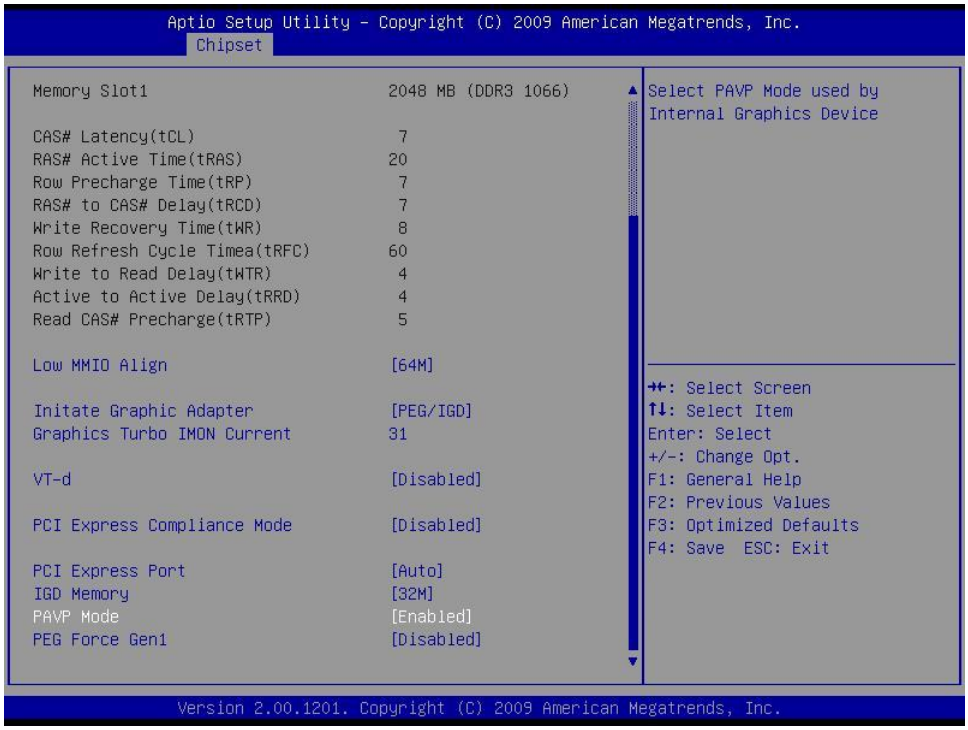
IGD Share Memory Size. Options are Disable, 32M, 64M and 128M.

PAVP Mode

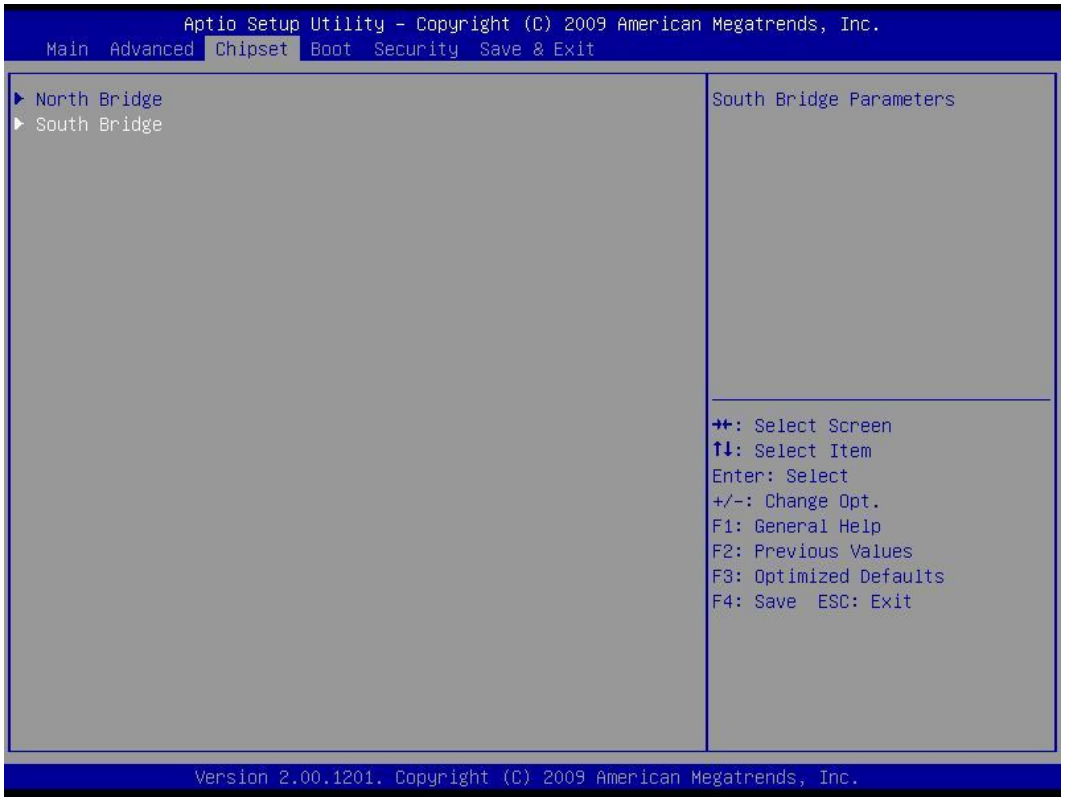
Select PAVP Mode used by Internal Graphics Device. Options are Disabled and Enabled.

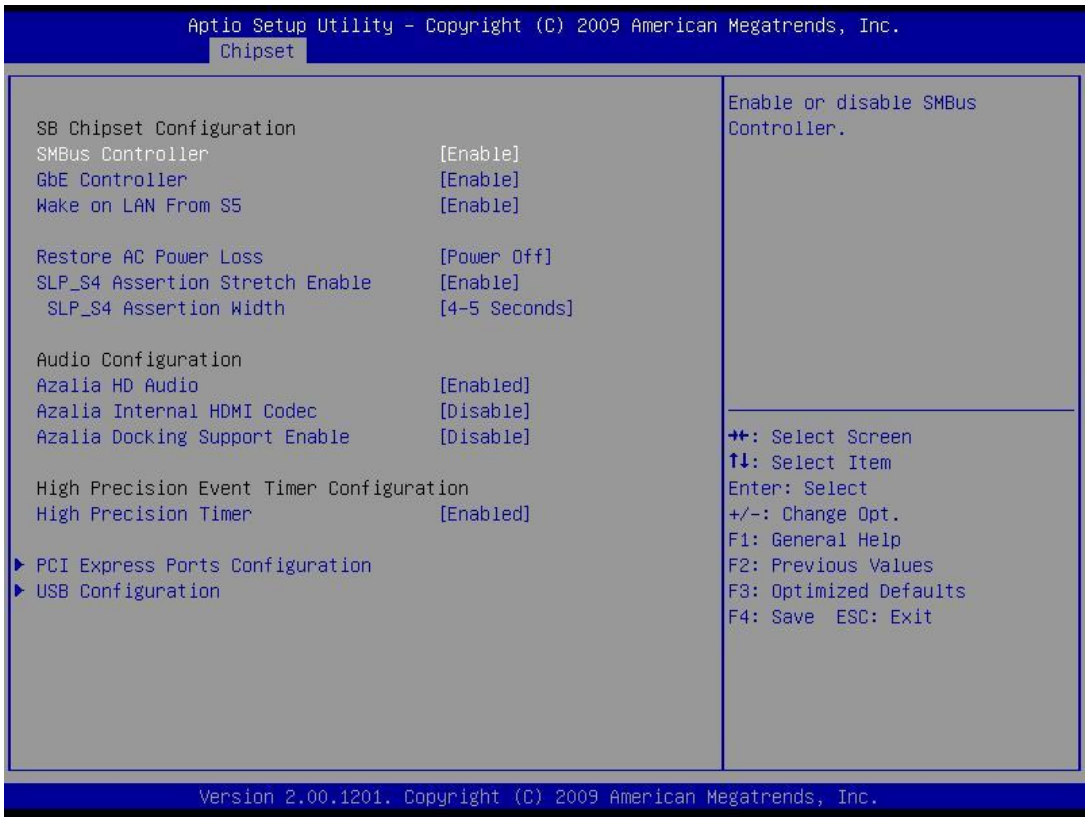
PEG Force Gen1

PCI Express Port Force Gen1. Options are Disabled and Enabled.


Aptio Setup Utility – Copyright (C) 2009 American Megatrends, Inc.
Chipset
Memory Slot1 2048 MB (DDR3 1066)
CAS# Latency(tCL) 7
RAS# Active Time(tRAS) 20
Row Precharge Time(tRP) 7
RAS# to CAS# Delay(tRCD) 7
Write Recovery Time(tWR) 8
Row Refresh Cycle Timea(tRFC) 60
Write to Read Delay(tWTR) 4
Active to Active Delay(tRRD) 4
Read CAS# Precharge(tRTP) 5
Low MMIO Align [64M]
Initate Graphic Adapter [PEG/IGD]
Graphics Turbo IMON Current 31
VT-d [Disabled]
PCI Express Compliance Mode [Disabled]
PCI Express Port [Auto]
IGD Memory [32M]
PAVP Mode [Enabled]
PEG Force Gen1 [Disabled]
Select PAVP Mode used by Internal Graphics Device
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save ESC: Exit
Version 2.00.1201. Copyright (C) 2009 American Megatrends, Inc.

South Bridge


Aptio Setup Utility – Copyright (C) 2009 American Megatrends, Inc.
Main Advanced Chipset Boot Security Save & Exit
North Bridge
South Bridge
South Bridge Parameters
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save ESC: Exit
Version 2.00.1201. Copyright (C) 2009 American Megatrends, Inc.


Aptio Setup Utility – Copyright (C) 2009 American Megatrends, Inc.
Chipset
SB Chipset Configuration
SMBus Controller [Enable]
GbE Controller [Enable]
Wake on LAN From S5 [Enable]
Restore AC Power Loss [Power Off]
SLP_S4 Assertion Stretch Enable [Enable]
SLP_S4 Assertion Width [4-5 Seconds]
Audio Configuration
Azalia HD Audio [Enabled]
Azalia Internal HDMI Codec [Disable]
Azalia Docking Support Enable [Disable]
High Precision Event Timer Configuration
High Precision Timer [Enabled]
PCI Express Ports Configuration
USB Configuration
Enable or disable SMBus Controller.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save ESC: Exit
Version 2.00.1201. Copyright (C) 2009 American Megatrends, Inc.

SMBus Controller

SMBus Controller help.

GbE Controller

This is constantly enabled.

Wake on LAN from S5

Wake on LAN from S5 help.

Restore AC Power Loss

Options are Power Off, Power On and Last State.

SLP_S4 Assertion Stretch Enable

Select a minimum assertion width of the SLP_S4# signal.

Azalia HD Audio

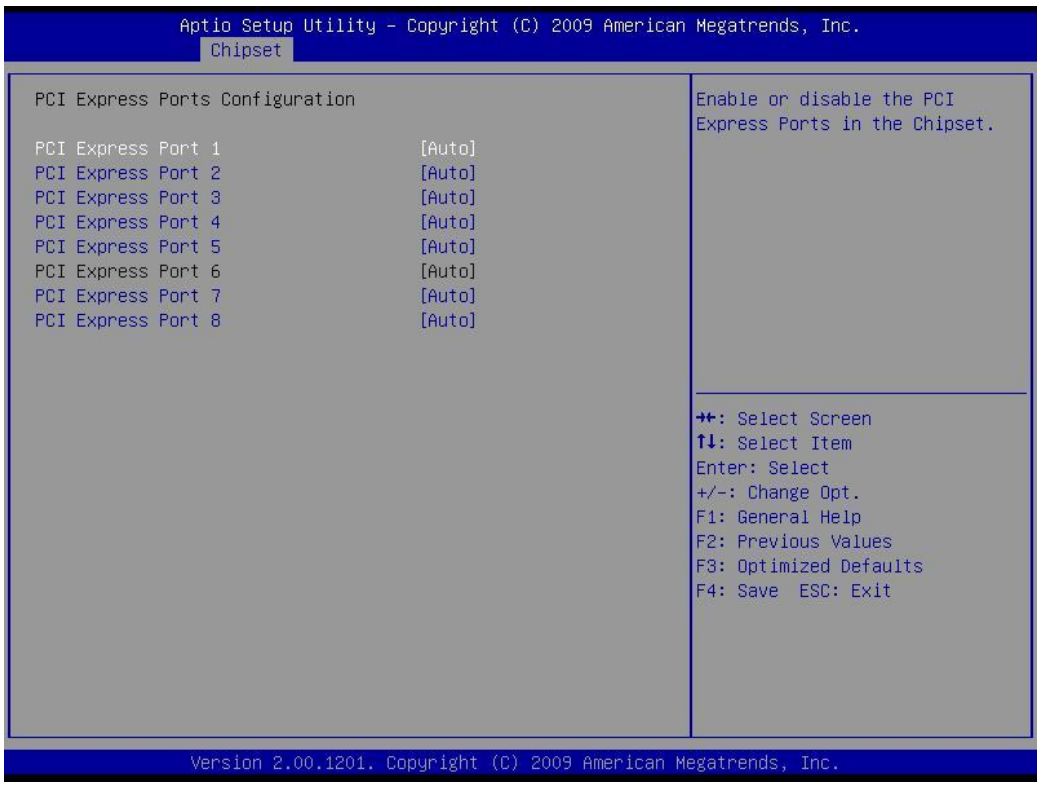
Enables or disables the Azalia HD audio.

High Precision Timer

Enables or disables the high precision event timer.

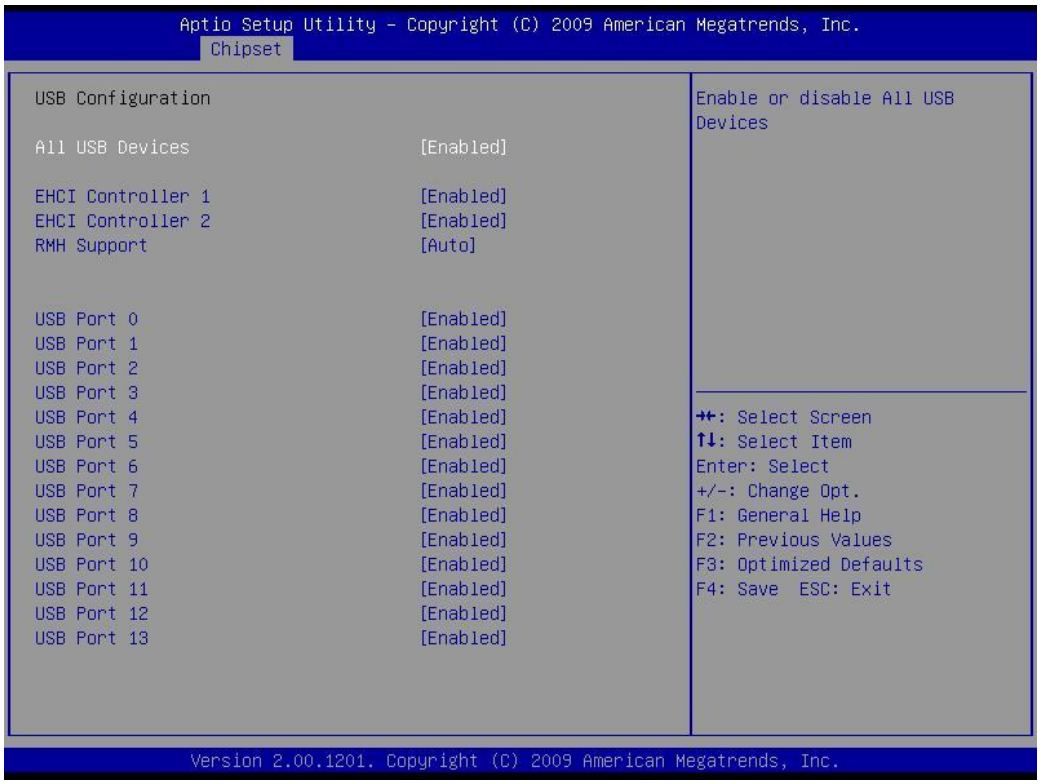
PCI Express Ports Configuration

Enable or Disable the PCI Express Ports in the Chipset.


Aptio Setup Utility – Copyright (C) 2009 American Megatrends, Inc.
Chipset
PCI Express Ports Configuration
PCI Express Port 1 [Auto]
PCI Express Port 2 [Auto]
PCI Express Port 3 [Auto]
PCI Express Port 4 [Auto]
PCI Express Port 5 [Auto]
PCI Express Port 6 [Auto]
PCI Express Port 7 [Auto]
PCI Express Port 8 [Auto]
Enable or disable the PCI Express Ports in the Chipset.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save ESC: Exit
Version 2.00.1201. Copyright (C) 2009 American Megatrends, Inc.

USB Configuration

Enable/Disable All USB Devices, USB 2.0 (EHCI) Support and RMH Support. The setting of AUTO on RMH Support Enable RMH support on Ibex Peak B0 Stepping.



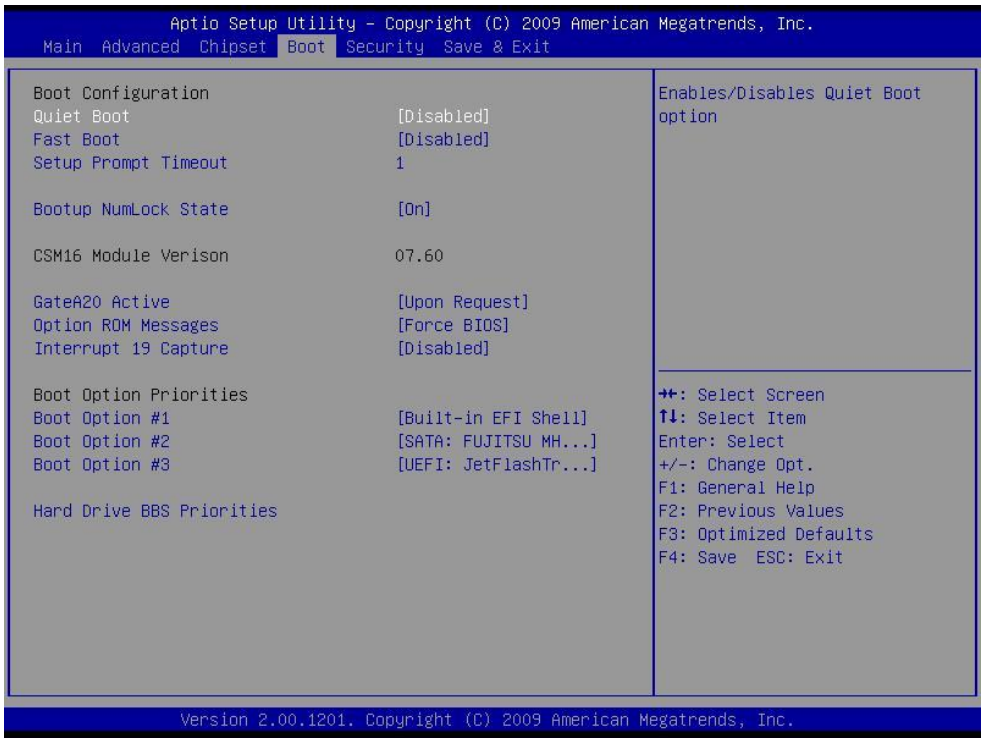
All USB Devices

Enables or disables all USB devices.

EHCI Controller 1 and EHCI Controller 2

These fields are used to enable or disable Enhanced Host Controller Interface (USB 2.0).

8.4 Boot


Aptio Setup Utility – Copyright (C) 2009 American Megatrends, Inc.
Main Advanced Chipset Boot Security Save & Exit
Boot Configuration
Quiet Boot [Disabled]
Fast Boot [Disabled]
Setup Prompt Timeout 1
Bootup NumLock State [On]
CSM16 Module Verison 07.60
GateA20 Active [Upon Request]
Option ROM Messages [Force BIOS]
Interrupt 19 Capture [Disabled]
Boot Option Priorities
Boot Option #1 [Built-in EFI Shell]
Boot Option #2 [SATA: FUJITSU MH...]
Boot Option #3 [UEFI: JetFlashTr...]
Hard Drive BBS Priorities
Enables/Disables Quiet Boot option
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save ESC: Exit
Version 2.00.1201. Copyright (C) 2009 American Megatrends, Inc.

Quiet Boot

Enables or disables the quiet boot function.

Fast Boot

Enables/Disables boot with initialization of a minimal set of devices required to launch active boot option. Has no effect for BBS boot options.

Setup Prompt Timeout

Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting.

Bootup NumLock State

This allows you to determine the default state of the numeric keypad. By default, the system boots up with NumLock on wherein the function of the numeric keypad is the number keys. When set to Off, the function of the numeric keypad is the arrow keys.

GateA20 Active

UPON REQUEST – GA20 can be disabled using BIOS services. ALWAYS – do not allow disabling GA20; this option is useful when any RT code is executed above 1MB.

Option ROM Messages

Set display mode for Option ROM. Options are Force BIOS and Keep Current.

Boot Option #1、#2、#3

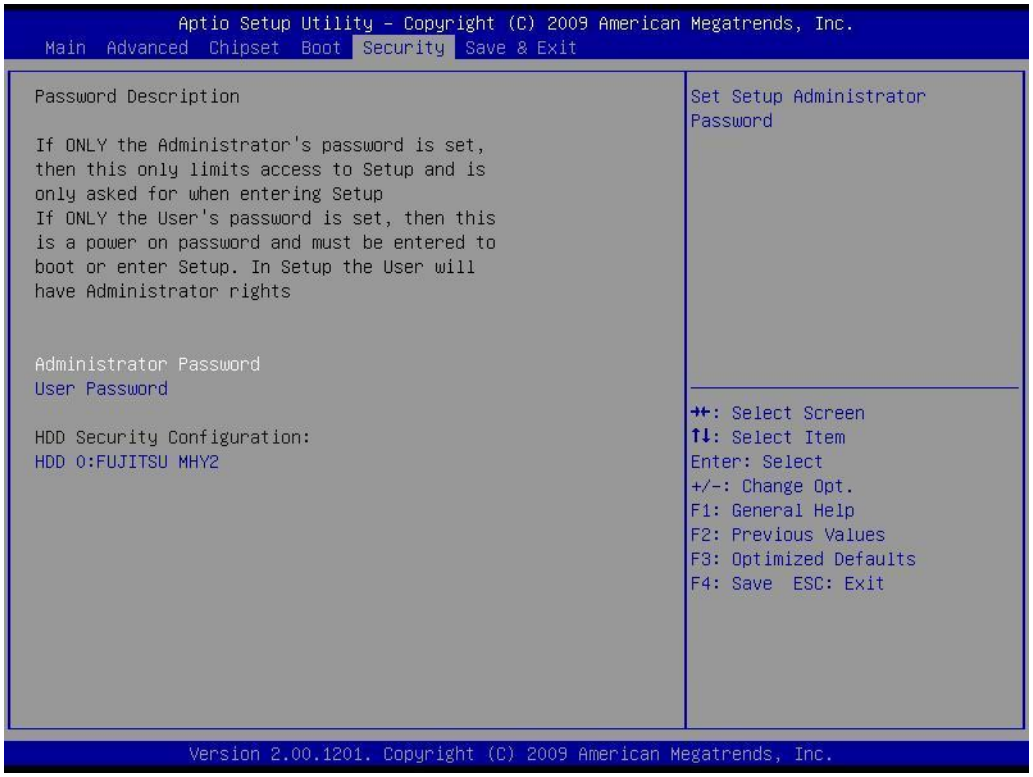
Selects the boot sequence of the device.

Hard Drive BBS Priorities

Set the order of the legacy devices in this group.

8.5 Security

This section allows you to configure and improve your system and llows you to set up some system features according to your preference.


Aptio Setup Utility – Copyright (C) 2009 American Megatrends, Inc.
Main Advanced Chipset Boot Security Save & Exit
Password Description
If ONLY the Administrator's password is set, then this only limits access to Setup and is only asked for when entering Setup
If ONLY the User's password is set, then this is a power on password and must be entered to boot or enter Setup. In Setup the User will have Administrator rights
Administrator Password
User Password
HDD Security Configuration:
HDD 0:FUJITSU MHY2
Set Setup Administrator Password
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save ESC: Exit
Version 2.00.1201. Copyright (C) 2009 American Megatrends, Inc.

Administrator Password

Set Setup Administrator Password.

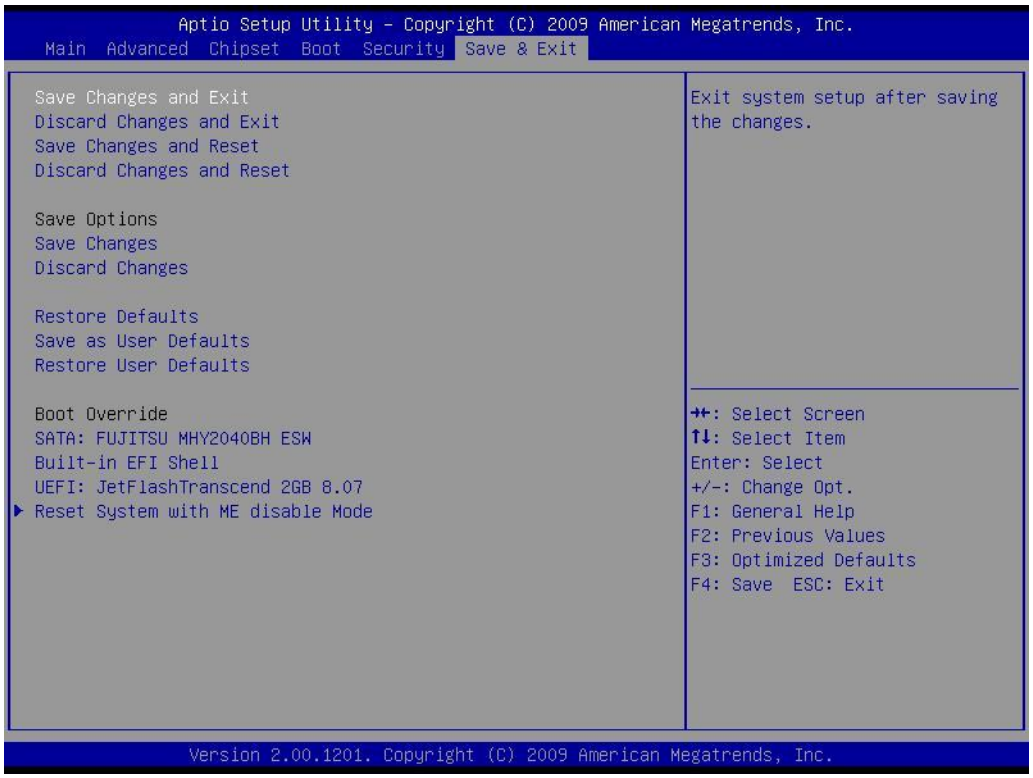
User Password

Set User Password.

HDD 0: FUJITSU MHY2

Sets the HDD password.

8.5 Save & Exit


Aptio Setup Utility – Copyright (C) 2009 American Megatrends, Inc.
Main Advanced Chipset Boot Security Save & Exit
Save Changes and Exit
Discard Changes and Exit
Save Changes and Reset
Discard Changes and Reset
Save Options
Save Changes
Discard Changes
Restore Defaults
Save as User Defaults
Restore User Defaults
Boot Override
SATA: FUJITSU MHY2040BH ESW
Built-in EFI Shell
UEFI: JetFlashTranscend 2GB 8.07
Reset System with ME disable Mode
Exit system setup after saving the changes.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save ESC: Exit
Version 2.00.1201. Copyright (C) 2009 American Megatrends, Inc.

Save Changes and Exit

Exit system setup after saving the changes.

Disacard Changes and Exit

Exit system setup without saving any changes.

Save Changes and Reset

Reset the system after saving the changes.

Discard Changes and Reset

Reset system setup without saving any changes.

Save Changes

Save Changes done so far to any of the setup options.

Discard Changes

Discard Changes done so far to any of the setup options.

Restore Defaults

Restore/Load Defaults values for all the setup options.

Save as User Defaults

Save the changes done so far as User Defaults.

Restore User Defaults

Restore the User Defaults to all the setup options.

Reset System with ME disable Mode

ME will run into the temporary disable mode.

Chapter 9 Services / Updates

9.1 IC70 Official Website

The relevant information about IC70 Products including the latest news and downloads will be presented in the website below:

http://www.winmate.com.tw/BoxPc/EmbeddedSpec.asp?Prod=05_0124&Typeid=B0123010302

Please go there to obtain further details of IC70 Products.

9.2 Company Information

Winmate Communication Inc.

9F, No.111-6, Shin- De Rd,. San- Chung City Taipei 241, Taiwan, R.O.C.

Tel: 886-2-8511-0288

Fax: 886-2-8511-0211

Contact us: sales@winmate.com.tw

Distributor and more products:

Please refer to our website: www.winmate.com.tw